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ABSTRACT

This dissertation focuses on the impact of various community college environments on student persistence. Persistence is defined in the study as enrolling in the second semester of a student's first year at Schoolcraft College in Michigan. The study used information from placement tests and a college experiences survey to gather data from 1,263 first-year students. A past instrument that measured persistence was also examined for possible changes over time. Placement scores, college grade point average, and receipt of financial aid were among the most significant predictors of persistence. Students who stated that the community college was their first school of choice were also likely to persist. The findings were similar for part-time and full-time students. Overall, a sense of connection to the college is seen as a necessity to persistence or retention. Appendices explain the formulas and methodology used to compile data for the research, along with the guidelines followed. (Contains 28 tables and 80 references.) (MKF)

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ED 459 894

THE IMPACT OF INTEGRATIVE EXPERIENCES ON PERSISTENCE: A STUDY OF NONTRADITIONAL STUDENTS

by

Lea M. Allison

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(Education)
in the University of Michigan
1999

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DEDICATION

To my family, Andy, Lezlie, Michael, Joe, Kim, Samantha and Gary
for their understanding, love and support
and
to my grandchildren, Erin, Megan, Cecilia, Stephanie and Lindsey
who still loved a grandma who was always studying
and
to my husband, Ron, who was always there for me
and instinctively knew when to give a little push.

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Just as a beginning student needs social support, so does the graduate student. Thanks to my special social support system, Mary Louise Doran, Sirkka Kauffman, Barbara Alpern, and Georgianna Herzberg.

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CHAPTER I

INTRODUCTION

The current era of globalization, technology, and information demands a work force that can think creatively, be self-managing, and perform highly-skilled operations. This era demands a workforce that uses the basic academic skills of reading, writing, mathematics, speaking and listening. It is estimated that in 1950, 40 percent of available jobs required college level skills in mathematics, science, and language arts. In 1994, 66 percent required college level skills, and by the year 2000 it is likely that this number will increase to 80 percent. Tomorrow's workplace will require more high performance workers with the ability to apply knowledge (Daggart, 1995).

Among the expected outcomes of a college education are "the fostering (of) a high level of verbal and mathematical skills," and "facilitating one's ability to think reflectively, analytically, critically, synthetically and evaluatively" (Pascarella and Terenzini, 1991, p. 1). As a result of these outcomes, research has shown that formal college education has a positive relationship to enhanced occupational and economic status (Pascarella and Terenzini, 1991). Therefore, as the training ground for tomorrow's work force, the challenge to higher educational institutions today is to provide more opportunities for more students to learn the basics, as well as, unique and high-level skills in new and different ways.

The perceived benefit of a college education is one of the factors that has dramatically changed the demographics of today's college students. More women, minorities, older and part time and commuting students are attending college. Women now comprise 54.5 percent of the college population, minorities have grown to 19.2 percent (Carter and Wilson, 1992).

One type of higher educational institution that has experienced a rise in student enrollment is the two-year, community college. Community colleges provide a convenient, inexpensive means of attending college for the high school graduate and also provide the nontraditional students, older, part-time, commuting students, a second chance to attend college. Within the public sector, two-year institutions grew faster than four-year institutions in the late 1980s and early 1990s. As a result, two-year institutions increased their share of public enrollment from 31 to 37.6 percent between 1985 and 1993 (U.S. Department of Education, 1995).

The cost of starting and completing a college education today is high, yet the cost to the student and the American public of not completing a college education is even higher. When a student decides not to finish their college education, they suffer the psychological cost of disappointment and self-esteem, they forgo future earning potential, not to mention the cost of funds and time already invested. When a student completes college, society benefits by having a knowledgeable citizen that tends to be more optimistic about him/herself and participates in the national economy, he/she belongs to more organizations, takes more leadership roles, is better informed about national issues and votes more often (Cope and Hannah, 1975). Therefore, attendance and persistence in college are important to the individual, to educational institutions, and to society as a whole.

Yet of the nearly 2.4 million students who started college for the first time in 1993, nearly 1.5 million students will leave without ever receiving a degree and nearly 1.1 million will leave higher education altogether (Tinto, 1993). Also statistics revealed in 1990 that only 25 percent of first year, community college students were enrolled in some form of higher education the following year (U.S. Department of Education, 1995).

Problem Statement

When the benefit is so evident, why are students starting college and then inexplicably dropping out? When a college enrollment decline was predicted to occur in the 1980s, educational institutions responded by initiating activities to increase student enrollments and retention. It became apparent that from a marketing standpoint, the cost to retain a student was much less than attracting a new student. So a key objective became the examination of the correlates to student persistence. In the last 25 years, this concern has resulted in a preponderance of research targeted at studying the academic, social and institutional factors that could affect student retention (e.g., Spady, 1970, 1971; Tinto, 1975, 1993; Cope and Hannah, 1975; Pantages and Creedon, 1978; Raimst, 1981; and Bean, 1980).

Before 1970, the bulk of the research consisted of descriptive studies. Since 1970, the best research on academic persistence has been guided by theoretical models (e.g., Spady, 1970; Tinto, 1975; Bean, 1980). Specifically, persistence models trace the relationships between the student's entering characteristics, the intervening events, and eventual decisions to either stay, transfer, or leave higher education altogether. In various studies, persistence has been defined as student reenrollment in the next year, next semester, or even next class (e.g. Pascarella and Terenzini, 1980; Bers and Smith, 1991). "At community colleges, persistence from one semester to the next during the academic year averages about 50 percent. Because of the high percentage of students who do not persist in contiguous semesters, community colleges typically focus efforts to increase retention on a semester-by-semester basis rather than from one academic year to the next" (Bers and Smith. 1991, p. 543). Theoretical models include the core concepts of social integration and academic integration. Academic integration is determined by the student's academic performance and the students' level of intellectual development (Pascarella and Terenzini, 1980). Social integration is a function of the students' interactions with faculty, staff and peers in a social niche where students and faculty share values, and support each other through friendship and mutual concern (Hossler, Bean and Associates, 1990).

Most of the research conducted in the last twenty years centers on Tinto's 1975 longitudinal model of institutional departure and subsequent revisions of the model (Tinto, 1975; 1987; 1993). Attrition research has focused primarily on the traditional, residential, college-age student (e.g., Pascarella and Terenzini 1980; Munro, 1981; Volkwein, King and Terenzini, 1986). This research has shown that such constructs as academic and social integration, as defined in the Tinto model and operationalized by researchers, have a positive relationship with student persistence. But with the rise in popularity of the community college and their nontraditional students, subsequent research has begun to focus more on these students. Although nontraditional students have increased in number, they continue to demonstrate a lower rate of persistence in higher education than their traditional counterparts (Bean and Metzner, 1985). At community colleges, where virtually all students are nontraditional students, it has been shown that only a third of beginning full-time students continue on to receive a certificate or associates degree (Tinto, Russo and Kadel, 1994).

The limited number of studies conducted at community colleges has shown academic integration to be significant, but social integration has received mixed results as being significantly related to persistence for the students attending community colleges. Typically nontraditional students are noted for less contact and shorter periods of time with the primary agents of socialization (faculty and peers) at the institutions they attend (Bean and Metzner, 1985).

However, evaluating and generalizing the social integration concept across diverse subpopulations and different educational institutional settings is inherently more difficult than for a homogeneous population at a four-year residential setting (Smith, 1989). In 1980, Pascarella and Terenzini conducted a study "to examine the predictive validity of a measure constructed specifically to assess the two dimensions (academic and social integration)" (p. 61). Many of the studies have used this same measure, called the Institutional Integration Scale, to measure social integration at all institutions (e.g. Volkwein, King and Iverson, 1983; Loppnow, 1989; Stage, 1989). But the socialization process is inherently different at various institutions because of students' age, attendance patterns, and nonresidential status. This suggests the need to research a specific institutional setting such as a community college and its various subpopulations with particular attention to their socialization process. The typical community college has commuting students, older students, and students with multiple obligations in addition to the school work. These obligations include family and work responsibilities that limit their time and energy. In a 14-year, longitudinal study of 22,652, high school graduates it was reported that one out of every four members of the Class of '72 eventually attended a community college. They used the community college for occasional and ad hoc purposes. It showed that American adults go to school on their own terms, on their own time, and, preferably, at an institution nearby. They are interested in learning, in acquiring a new skill, and in completing basic general education and are looking for something related to current work or anticipated career. "Given its occasional roles, minimal costs, and ease of access at the community college, by its very nature, can reach a broader spectrum of American society than other types of postsecondary institutions. This reach is augmented by the sheer number and geographical distribution of community colleges" (Adelman, 1992 p. 23). Given these multiple purposes and broad outreach, how does attendance at a community college impact students' social integration and its relationship to persistence? How are students' social integration distinct at a community college? Some of the researchers have had considerable difficulty answering these questions for this student population. This literature will be reviewed in Chapter II.

Purpose of the Study

Given the absence of empirical data specifically tailored for the social integration of community college students, the objective of the present study is to develop new measures that will capture the particular type of social integration experienced by these students to determine if there is a relationship to persistence. I have a long standing personal interest in this area that emerges not only from experiences as a student but as a faculty member in a community college. My interest in this area stems from my own experiences first as a traditional student at a major four-year residential university and, after marriage and children, as a nontraditional student attending a community college. Also because I am a community college faculty member and teach students who are older and who juggle multiple roles in order to attend college, I want to have a clearer understanding of how these students adjust to college, learn to cope and survive in a collegiate environment, and why some students persist and others do not. The institution where I am employed is committed to the goal of furthering retention and determining the actions it can take to enhance student retention. As the former co-chair of a faculty-led committee to investigate learning communities as a way to increase persistence, I want to see how differences in social integration can impact students' persistence.

The social aspects of my own experiences were very important at both types of institutions, but the motivation, how relationships developed, and depth of relationships were quite different. I see community college students exhibiting different types of social relationships and different methods of communication. These differences need to be recognized and measured accurately when using Tinto's institutional model of student departure. Therefore this study will use a survey instrument designated as the College Experiences Survey that I specifically developed for community college students.

Guiding Research Questions

The purpose of this study is to answer the following broad research questions:

1. To what degree is the College Experience Survey, a measure designed specifically for the population served by a community college, a valid predictor of persistence of college students?
2. To what degree is the College Experience Survey a better assessment of social integration of the population served by a community college than the Institutional Integration Scale previously used in research?
3. To what degree does social integration have an impact on a nontraditional student's decision to re-enroll as an indicator of persistence in a community college?
4. To what degree does social integration have an impact on various subgroups of nontraditional students, such as women or part-time students, and their decision to re-enroll the next term?

In order to answer these questions, the present study was conducted in two parts. The first part consisted of developing a survey instrument to measure social integration for community college students. This work was guided by previous research based on focus group discussions conducted at a community college (Allison, 1996). This work is appropriate because it was conducted at the same community college that was studied in the present project.

Following Tinto's (1993) theoretical model of persistence, the second part of the study entailed administering the survey to students who have been identified as intending to reenroll the following semester. Tinto's 1993 Model was chosen for several reasons. First, Tinto's model is an all encompassing, general model. This is the latest model of student departure in a whole series of models that have been developed for traditional students (Spady, 1970; Tinto, 1975), nontraditional students (Bean and Metzner, 1985), and community college students (Webb, 1989). Tinto's 1993 model is an institutional model, with broad constructs that allow each institution to identify the specific measures. Tinto's 1993 model is distinct in that it incorporates the external communities that have been recognized in various studies (Chickering, 1974, Bean, 1990) as important for nontraditional students. While there have been numerous tests of previous Tinto models (1975, 1987), this study is one of the first to test the 1993 model.

A key objective of the study was to determine if a survey instrument, specifically one designed for community college students, can definitively establish social integration as significantly related to persistence among this population. Testing a new social integration measure along with the more widely used Institutional Integration Scale (Pascarella and Terenzini, 1980) will also determine whether the measures designed for this study is a more appropriate predictor of persistence.

Significance and Scope of the Study

This study is important because at a time when nontraditional students are returning to community colleges in ever increasing numbers, statistics continue to show a high rate of dropout. At a time when community colleges are concerned about maintaining their enrollment, continued efforts need to be taken to understand the experiences of nontraditional students. The knowledge this research provides is intended to help the community colleges better serve their student bodies.

Tinto's model of student persistence is a longitudinal, institutionally-based model. Therefore it necessitates that the research be conducted at a single community college. This allows for definitive information about the students and persistence factors at a specific institution. Since the past research has indicated mixed results (see Chapter II), it is important to pay particular attention to the way social integration is interpreted and measured. This will necessitate obtaining data based on information gathered from the students themselves that, in turn, can be used to assist institutional planners and faculty facilitate student retention.

Even though it would be helpful to examine all first-time, first-semester students, this study will be limited to just those first-time, first-semester students who complete the ASSET and CPT tests. This particular group of students represent approximately 75 percent of the total first-time, first-semester students. The important reason for using the ASSET and CPT tests is the information from those tests correctly identify those students whose initial goal at college entry is to return the following semester. This is an important precept for conducting the study as will be further elaborated in the next section.

Since this study is a single-institution study, the results may be generalized for the institution only. This institution, unfortunately, does not represent a wide-cross section of students from different races and ethnicities. But this study is an important beginning in detecting whether social integration is predictive of persistence for nontraditional students at this particular community college.

CHAPTER II

THEORETICAL FRAMEWORK

Theories can invoke mixed reactions. Some practitioners believe theories are too abstract, and yet others may argue otherwise. "A theory's value lies in (its) ability to explain and its ability to guide the selection of certain constructs (variables) to be evaluated while eliminating others. Theories can be used to guide practice" (Hossler and Bean, 1990, p. 150). Models are constructed to show important factors, the relationship between the factors, and tie the theory to specific situations. This study will use Tinto's 1993 longitudinal model of institutional departure. This particular model, based on the two core concepts of academic integration and social integration, was designed for single-institution studies and has been widely used in educational research. It is general and its applicability is broad. Previous studies have used the 1975 model to test the effects of orientation courses on retention, student growth and development, application to women, and minorities. Some of the results from these tests of an earlier model will be reviewed for as yet, no study has attempted to develop and apply the 1993 model.

Prior to the 1970s, attrition research had been primarily "atheoretical" and "narrowly empirical in design and execution" (Rootman, 1972, p. 258). Reviews of the literature on student attrition lamented about the lack of clear concepts, methodology, and a lack of a definite theoretical basis (Summerskill, 1962). The first theoretical model of student attrition was a sociological model developed by William Spady in 1970. Spady (1970), in part, based his theory on Durkheim's (1951) theory of suicide. Durkheim suggested that personal happiness depends on the individual's ability to develop a sense of meaning through group involvement. Spady believed that if the values held by the student and the institution differed substantially, the student would remove himself/herself from the environment and drop out. Spady's sociological model was an interdisciplinary approach involving interaction between the individual student and the particular college environment.

The social system is represented in Spady's model by measures of normative congruence and friendship support. It was Spady's (1971) opinion that full (social) integration into the common life of the college depends on successfully meeting the demands of both its social and academic systems. Student satisfaction is the outcome of the social integration and is the direct link to institutional commitment which is the precursor to a student's dropout decision (See Spady model in A-1 Appendix A).

In 1975, Vincent Tinto developed a longitudinal model based on the Durkheimian model of Spady (1970) (Appendix A-2). This model more clearly distinguished the academic and social factors. Tinto's model was comprised of essentially six components: 1) pre-enrollment characteristics of students; 2) initial commitments to their goals and the institution; 3) academic and social systems of the institution; 4) degree of academic and social integration; 5) changes in goals and institutional commitments as a process of academic and social integration; and 6) the decision to dropout or persist. Tinto emphasized the longitudinal nature of the process.

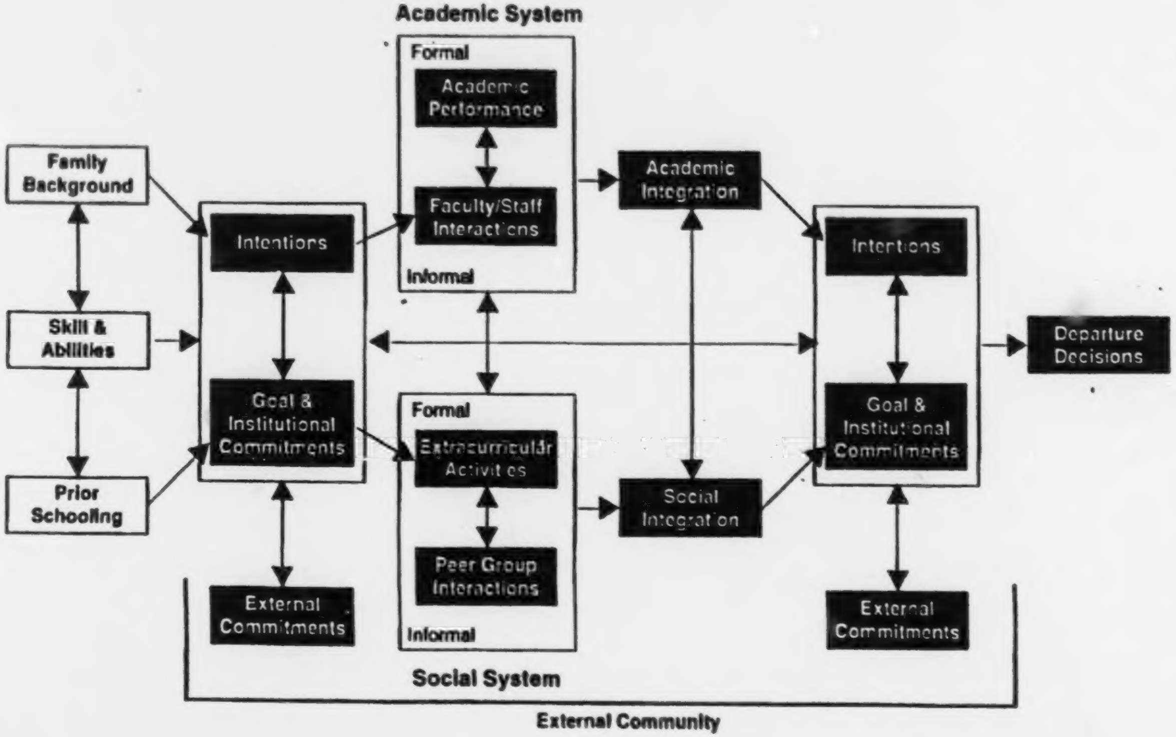
Tinto made modifications in 1987, and again in 1993, utilizing a theoretical explanation of attrition based on Van Gennep's (1960, as reported by Tinto, 1987) rites of passage (Appendix A-3 and 4). The rites of passage occur in three stages: separation (from family and childhood support), transition (ordeals and training in new values and activities), and incorporation (adapting of a new set of values and behaviors). Tinto proposed that attrition occurs when an individual's rites of passage is incomplete. He believed that this perspective provided a "way of thinking about the longitudinal process of student persistence in college and by extension, about the time-dependent process of student departure" (Tinto, 1993, p. 94). He admits that the process differs for each student, but that it does "provide a conceptual framework identifying [these] three distinct stages [separation, transition, and incorporation] or phases of association of the individual with the other members of the institution" (p.95).

Description of the Model

As stated, this study will use the Tinto's 1993 model of institutional departure which is an integrative model designed to explain a student's voluntary departure as the longitudinal process occurs within an institution of higher education (See Figure 1). It seeks to explain how the academic and social experiences in the collegiate setting have an impact on students of different characteristics which in turn causes them to withdraw from the institution before completing a certificate or degree. This model is also "policy

Source: Tinto, 1993

Figure 1
A Longitudinal Model of Institutional Departure



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relevant" (Tinto, 1993 p.113) in that it can used by the institution as a guide to modify policies, procedures and to take action to further retain their students.

Tinto theorized that students come to a particular institution with certain characteristics such as gender, race, academic ability, high school academic performance, and family social status; goal commitments as measured by highest degree expected and importance of graduating from college; and institutional commitments as measured by choice in attending this institution (Pascarella and Terenzini, 1980). These factors have an influence on how the student will perform academically and how they will interact in the academic and social systems of the college.

Upon entering the college with these attributes and goals and commitments, the students are exposed to experiences in both the academic and social systems of the institution. In the original model, the academic system was represented by grade performance and intellectual development (Tinto, 1975), but in Tinto's 1993 model, the academic system is represented by grade performance and faculty/staff interactions. Tinto (1987) distinguishes between the outside-classroom faculty contact and the inside-classroom faculty contact. He stated that research has shown that contact with faculty outside of the classroom tends to be important in distinguishing those students who persist and those who voluntarily withdraw. But he also concludes that classroom faculty contact is not unimportant, the teaching style of faculty and student classroom activity leads to the student's perception of the receptivity of the faculty member for further contact outside of the classroom. In a community college where outside classroom interaction is limited, it may well mean that the interactions inside the classroom are the only contexts in faculty/staff interactions.

Summerskill in his 1962 review of the literature found a highly significant relationship between attrition and first semester college grades. Since that time, college grade performance has been isolated as the single most important factor for predicting persistence in many research studies (e.g. Blanchfield, 1971; Kamens, 1971). Subsequent literature reviews by Pantages and Creedon (1978) and Tinto (1975), concluded that students' grade average showed a strong negative relationship with attrition from college. Typically low grades inhibit student integration because there is less "fit" with peers and institutional expectations. More recent research has continued to include GPA as a partial measure for academic performance (Bers and Smith, 1991; Pascarella, Duby, and Iverson, 1983; Pascarella, Terenzini, and Wolfle, 1986). In the study by Pascarella and Terenzini (1980), researchers included several survey items related to the student's perceived intellectual development as a partial measure of academic integration. Another indicative measure has been the quality and frequency of study habits (Nora, Attinasi, and Matonak, 1990; Volkwein, 1991). In a qualitative study, Starks (1987) found that in order for the nontraditional students to juggle their many roles they "lowered their expectations for grades in college and set limits on their capabilities" (p 10). For the persisters in the study, academic integration had more relevance when they talked about their study habits and their use of student services such as peer tutoring, career counseling, learning assistance, or study skills courses. To test the 1993 model, GPA and intellectual development measures will continue to be used, but will also include survey items about study habits and utilization of academic student services as a process measure of academic integration.

Social interactions in Tinto's 1993 model are represented by extracurricular activities and peer group interactions. This is a departure from the earlier 1975 model in that social interactions were comprised of the peer-group interactions in addition to the faculty interactions. These faculty interactions are currently included in the academic system and are considered academic integration measures. In a community college setting, the extracurricular activities may be more related to the utilization of academic student services than the typical social functions because time is such a critical factor. The social interactions also differ for community college students and survey items must reflect this difference.

In summary, the model posits that positive academic and social interactions tend to reenforce the student's goals, commitments, and continued persistence. Negative interactions tend to weaken the student's goals and commitment and thus promotes withdrawal from the institution.

A major addition in Tinto's 1993 model was its recognition that not all students operate from a four-year residential setting. Following the work of several researchers (Christie and Dinham, 1991; Bean and Vesper, 1992; and Cabrera, Castaneda, Nora and Hengstler, 1992), Tinto "nested" his 1993 model in an external environment comprised of external communities with their own set of values and behavioral requirements. For some students, going to college is but one commitment along with other possible commitments to family, job, friends. As such these other commitments may either provide a pull or drain away from the college commitment, or conversely may reinforce and support the college commitment. Either way the interaction with external social influences is but another element in the continuing longitudinal process of commitment (or lack of commitment) to college and is a direct predictor of college persistence or attrition. Tinto believes that external communities influence the decision to attend college; but argues, that if those influences remain stable, then the interactions in the college community still are the prime influences in the decisions of departure. If, however, the student has a weak connection or commitment to the institution, then the external forces will further influence the student's dropout decision. These assumptions have yet to be tested in a single institution, however.

Experiences in either the academic or social system of the college necessarily influences experiences in the other system. Tinto's 1993 model argues "that to fully comprehend the longitudinal process of departure, one must take note of the full range of individual experiences, which occur in the formal and informal domains of both the social and academic systems of the institution" (Tinto, 1993, p. 118). The model does not argue that full integration in both academic and social systems is necessary for persistence, but that some degree of social and academic integration must exist as a condition for continued persistence. Tinto believes that both the social and intellectual components play a part, albeit different, in the process of persistence. Tinto posits that "individual integrative experiences in the formal and informal academic and social communities of the college and the interplay between them, as conditioned by external events, are central to the process of departure" (p. 120).

Tinto's 1993 model of persistence is "at its core, a model of educational communities that highlights the critical importance of student engagement or involvement in the learning communities of the college" (p. 132). Tinto acknowledges that many students, such as those attending community colleges, are commuting students and that much of their time is spent off campus. For returning adult students going to college means doing something in addition to, rather than instead of, something else. Their multiple roles as parents and employees require that they handle many responsibilities in addition to the responsibilities required of a college student. Tinto proposes that the classroom serves as the intersector of the academic and social systems, that the students' time on campus is primarily spent in the classroom. Students often arrive on campus, attend class, and then return home. John Gardner (Upcraft, Gardner and Associates, 1989) calls this the "parking lot, classroom, parking lot" syndrome.

Definitions

It is customary in papers such as this to have a section that defines the relevant terms in short, concise language to guide the reader through the rest of the paper. The terms nontraditional students, persistence, and social integration have had various and inconsistent definitions and have been operationalized differently by researchers in many studies.

This section will first discuss the research conducted at the different types of institutions; second, compare and contrast the various definitions as defined by the theorists and researchers, and; third provide examples of how persistence and social integration have been operationalized and measured for nontraditional students and selected subcultures.

Research at Different Types of Institutions

Spady's explanatory model (1970) and Tinto's (1975, 1987, 1993) longitudinal models of institutional departure were developed to explain departure decisions at four-year, largely residential institutions. Much of the early research that has been guided by Tinto's model has been conducted at these types of institutions (e.g. Pascarella, Terenzini and Wolfle, 1986; Volkwein, King and Terenzini, 1986; Pascarella and Terenzini, 1980; Terenzini and Wright, 1987). However, it is generally acknowledged that distinct student differences exist in other types of institutions such as four-year commuter schools, and two-year residential and commuter schools.

The mix of students attending higher education institutions has changed dramatically over the past 20 years. The proportion of students in four-year institutions attending part-time increased from 26.7 percent in 1970 to 31.4 percent in 1989. By 1991, nearly 42 percent of all undergraduate students were part-time students. Approximately 33 percent of undergraduate students are 25 years or older, and more than 55 percent of undergraduate students are women (National Center for Education Statistics, 1993). At the same time, the proportion of students who work while going to college has also increased, and many students are delaying their entry to college some years after high school (Tinto, 1993). These students are choosing colleges other than four-year residential institutions to attend.

Because of the convenient locations and open-admission policies the two-year colleges, especially those in urban and suburban locations, attract students who are less likely to complete a degree program than students who enroll at many four-year colleges. In general, community college students are older, more likely to be enrolled on a part-time basis, and attend classes for a wide variety of reasons other than obtaining a degree. Additionally the urban community college clientele are disproportionately composed of racial and ethnic minorities, many of whom are from lower socioeconomic strata and are somewhat less academically prepared than students at either suburban community colleges or four-year institutions (Grosset, 1991).

Researchers have begun to study the persistence models at these other institutions. Pascarella and Chapman (1983) conducted one study of four-year residential, four-year and two-year commuter settings. In that study, the researchers found the results of their study generally supported the predictive validity of Tinto's 1975 model, however there were some interesting differences between institutional types. These differences centered around the academic and social integration concepts. In four-year, primarily residential colleges, social integration had stronger direct and indirect effects than academic integration. The reverse was true in both two and four-year commuter institutions, academic integration had stronger indirect effects on persistence than did social integration. More recently, various concepts from Tinto's model have been tested at a more diverse group of institutional settings such as four-year commuter colleges (e.g. Loppnow, 1989; Cabrera, Nora and Castaneda, 1992, 1993; Ashar and Skenes, 1993), two-year community colleges (e.g. Whitaker, 1987; Nora and Rendon, 1990; Voorhees, 1987; Halpin, 1990; Meznek, 1987), and one study of two- and four-year commuter schools (Allen and Nelson, 1989). The patterns of influence in Tinto's (1975) model, vary substantially when it is used to explain persistence/withdrawal behavior at different types of institutions (Pascarella and Chapman, 1983).

Nontraditional Students

The differences in definitions between postsecondary traditional and nontraditional students vary greatly for theorists and researchers. Pascarella and Terenzini (1991) define traditional students as nonminority students of traditional college age (eighteen to twenty-two) attending four-year institutions full-time and living on campus. Their definition of nontraditional students would be all minority students, as well as, any students over the age of twenty-two, students residing on campus but attending part-time, students not residing on campus but attending full-time or part-time. Neither gender nor ethnic backgrounds were considered in this definition, however. In contrast, Tinto (1993) does not speak of traditional or nontraditional students, but instead mentions commuter students, part-time students, older students, working students, or minority students as a way of differentiating these students from the four-year residential students.

Bean and Metzner's (1985) research deals primarily with nontraditional students, and therefore they are precise in their definition. They too believe that traditional students are easier to define than nontraditional students, but cite three characteristics that help define nontraditional students; age, attendance, and residence. First, a nontraditional student usually does not live on campus. Chickering (1974) believes that this is an important aspect since this limits the students' socialization experiences with not only the lack of quality time with peers but also with the faculty. Second, a nontraditional student is defined by age 25 or older. The impact of being older is that generally the young adult socialization and values have been established. Therefore, Bean and Metzner conclude that older students are less susceptible to collegiate socialization than traditional students. The third characteristic is that many nontraditional students attend college on a part-time basis. This issue becomes very complex because a student can attend full-time one semester and part-time the next semester. Does this imply that they are traditional one semester and nontraditional the next semester? In response, Bean and Metzner believe that it is necessary for students to have at least one of the three characteristics, but not all of them, to be considered nontraditional.

The inconsistencies in the literature, even the omission of the nontraditional definition in some cases, signals one of the current problems encountered by researchers. It is difficult to compare results across studies because of these varying definitions of the population. For the purposes of this study the nontraditional students are defined as 25 years or older, part-time students, or, commuting students. This typically describes the population at a community college, particularly the one selected for this study. Although, the study will not exclude younger or traditional students, it should be noted that the majority of students are considered nontraditional for this study. Where possible, comparisons will be made with their more traditional counterparts.

Unique Differences of Nontraditional Students

Adult Students

The growth of adult students in higher education has offset the decline of high school graduating seniors. "The size of the nontraditional student body will continue to expand based on the fact that the absolute number of adults in our population is increasing and the pace of social and technological change that induces adults to engage in self-improvement is accelerating (Knowles, 1977). Adults are motivated to learn as they experience needs and interests that learning will satisfy. For adult students though, education may only be one of many environmental pulls on the individual. Adults returning to school are often in either a career or family transition (Knowles, 1990).

Steltenpohl and Shipton (1986) have worked with adult students for many years and summarize some of the problems for the adult students as:

> College entry signals transition in adult lives...Adults must make the transition from citizen-in-the-world to student when they enter college. At the same time, they may be negotiating transitions related to self, job, or family. These transitions may be conscious or unconscious. All are accompanied by uncertainties and risks as well as opportunities. In addition, new adult students lack confidence in their ability to study and learn. They are uncertain about expectations for college-level work. They do not understand the aims and purposes of liberal education. They lack information about the structure of colleges and universities and the organization of knowledge into disciplines. Their academic skills may be

> rusty or inadequate. They are strangers in this new world. They do not feel they belong. They feel marginal (p. 638).

Lynch and Chickering (1984, as cited in Schlossberg, Lynch and Chickering, 1989, p.59-60) summarize the ways adult learners are different as follows:

> 1. A wider range of individual differences, more sharply etched.
> 2. Multiple demands and responsibilities in terms of time, energy, emotions, and roles.
> 3. More--and more varied--past experiences.
> 4. More concern for practical application, less patience with pure theory, less trust in abstractions.
> 5. Greater self-determination and acceptance of responsibility.
> 6. Greater need to cope with transitions and with existential issues of competence, emotions, autonomy, identity, relationships, purpose, and integrity. (p.20)

Adult education literature supports the need for social interaction among adult students and the need to make connections with both peers and faculty. This interaction with other students validates their feelings and allows them an opportunity to share. Many adult learners return to school with shaky self-confidence, uncertain goals, or minimal experience with bureaucracies. Their commitment is often tenuous. To combat the feeling of isolation, a place to matter is important to adult learners. They express a need for a place to meet, to have coffee, to study, and to network. They also need someone with whom they can connect such as a mentor, academic adviser, counselor, faculty member, peers to make them feel involved. Many adults make friends when they return to school--friends who share their interests and the learning journey (Schlossberg, Lynch and Chickering, 1989).

Commuter Students

Research on commuter students has centered on the fact that the differences between commuters and residents vary according to socioeconomic background. Commuters are more likely to:

1. Report more problems with interpersonal relationships with peers and family and with financial problems;
2. See vocational reasons as the primary purpose for college;
3. Grow up in moderate size towns or cities or in large cities;
4. Report lower parental incomes;
5. Have lower high school grades and;
6. Report lower degree intentions.

However research shows that there are differences when applying these characteristics to different types of institutions. The differences described above are most pronounced in private universities and tend to fade at public universities. The differences are even less pronounced at public and private two-year colleges. What is important, however, is that these differences in background bear on the integrating experiences in the institutions; the students have different backgrounds, they then experience similar collegiate experiences, but because of the different backgrounds, perceive different outcomes. Since commuters are generally less involved and have fewer similar collegiate experiences than their residential peers, these differences between commuting and residential students tend to widen with time (Chickering, 1974).

Persistence

The various interpretations of persistence and non-persistence confounds the research. The terms academic dismissal, stopout, dropout, and persister reoccur often in the literature. Tinto (1993), in particular, warns researchers to distinguish a departure from college between academic dismissal and voluntary withdrawal. The latter is more common. Academic dismissal is the inability or unwillingness to perform the minimum requirements of college academic work and only 15 to 25 percent of all institutional departures arise because of academic failure (Tinto, 1993). An institutional dropout is defined as leaving the institution and as the failure on the part of the individual to attain a desired and reasonable educational goal. The institutional dropout may or may not be an educational system dropout. That is, an institutional dropout may transfer to another institution and therefore continue to pursue a degree in higher education. However, this is a study of an institutional model so anyone that leaves the institution is considered a dropout. On the other hand, the stopout is an individual who, after leaving an institution, re-enters at a later time to complete his/her educational goal. Tinto (1993) notes that the manner and rate at which individuals progress has changed and that a greater proportion are progressing more slowly through the system. The persister is the individual who completes their intended goal. However, Rossmann and Kirk, (1970 as reported by Tinto, 1993) state that it is important to recognize that individuals will sometimes choose to leave institutions prior to degree completion simply because the degree was not the intended goal. These individuals enter college seeking to gain additional skills, learn a specific content area, and/or acquire an additional number of course credits, accomplish the identified goal and leave satisfied. For this reason it is important to monitor students' initial intentions in order to distinguish further between students who enter and expect to obtain a degree from those who are taking an occasional class for personal development.

The persistence research reflects a myriad of time periods of persistence. Ideally, the research time frame should be to follow students through to degree completion. However, there are very few studies on the Tinto model that have been conducted for the full four years (e.g. Terenzini and Wright, 1987; Munro, 1981) or for the full two years (e.g. Meznek, 1987) of community college attendance. This is primarily because of the high attrition rates between terms and after the first year of college (Tinto, 1993).

How is Persistence Operationalized?

Persistence, in most studies (e.g. Halpin, 1990; Allen and Nelson, 1989; Cabrera, Nora and Castaneda, 1993), has typically been operationalized over a one-year period or a semester-to-semester period. The one-year period usually focuses on the freshman year and persistence is measured on whether or not the student returns for the sophomore year, or reenrollment. The freshman year is chosen because research has shown that this is a critical period in the student career, the time when students must make adjustments to the academic and social life of the college. Therefore, the incidence of withdrawal is highest during this early stage of the college career at many colleges (Upcraft, Gardner and Associates, 1989).

In analyzing the research studies, it was found that many of the four-year residential institutional studies (e.g. Pascarella and Terenzini, 1980; Pascarella, Terenzini and Wolfle, 1986, Terenzini and Wright, 1987) and four-year commuter institution studies (e.g. Pascarella, Duby and Iverson, 1983; Cabrera, Nora and Castaneda, 1992) operationalized persistence from the freshman year to the sophomore year. The studies conducted at two-year community colleges primarily focused on the return from one semester to the next semester (Starks, 1987; Halpin, 1990; Grosset, 1991; Bers and Smith, 1991).

The majority of the one-year studies survey the freshman students in the fall and spring sixteen-week semesters (e.g. Pascarella and Terenzini, 1980; Pascarella and Chapman, 1983; Cabrera, Castaneda, Nora and Hengstler, 1992; Cabrera, Nora and Castaneda, 1993). The data is collected in fall ($Time_1$), spring ($Time_2$) and the following fall ($Time_3$). The sample really consists of voluntary dropouts between $Time_2$ and $Time_3$ and students not returning between $Time_1$ and $Time_2$ are virtually eliminated from the sample. But, according to other researchers, many of the students who do leave voluntarily will do so during the first six to eight weeks of their initial semester (Blanc, Debuhr and Martin, 1983). This means important data is often lost on those students who chose to leave during the academic year.

A better measure of persistence, was developed by Nora, Attinasi, and Matonak (1990) by taking the inverse of the ratio of semester hours attempted by semester hours earned over a three-year period multiplied by the number of semesters attended during that same period of time. This was a much better measure because the study was conducted in a two-year community college where the students have a history of not attending in continuous semesters. This retention rate formula allowed them to analyze complete withdrawal from college. This measure included partial dropouts (those dropping some, but not all, courses) and stopouts (those who left for a semester or two but who later reenrolled).

In summary the persistence/withdrawal decisions have been evaluated using several different time frames. The majority of the studies appear to be most interested in identifying the first-semester or first-year dropout. In a community college, the largest percentage of attrition generally occurs between the fall and winter semester. Therefore this study defines persistence for first-term, first-year students as continued attendance between the fall, 1996 and the winter, 1997 semesters. While ideally one would follow the Nora Attinasi and Matonak (1990) persistence measure, the study's time frame is short and the college is more likely to benefit from the knowledge gained regarding students' behaviors in the first year of college. This study defines persistence as continuing from the fall semester to the winter semester.

Social Integration

The interaction of peers and faculty is a powerful source of support for students. "To paraphrase the extensive work of Pascarella and Terenzini and their colleagues, voluntary withdrawal is much more a reflection of what occurs on campus after entry than it is of what has taken place before entry. And of that which occurs after entry, the absence of contact with others proves to matter most" (Tinto, 1987, p. 65).

However, the theorists and researchers have labeled and defined social integration differently. Spady's (1970) model of persistence contained a social system represented by friendship support. Tinto's (1993) model reflects the college environment as being comprised of an academic environment and a social environment. Within these environments, students interact formally and informally. Other researchers (Pascarella, 1980; Bean and Metzner, 1985; Webb, 1989) agree that these environments exist, but they do not agree on the relative proportion of significance that each environment has on student persistence.

Tinto (1993) regards social integration as one of two primary concepts in his model. Social integration consists of the interactions a student has with other students on a formal and informal basis. Formal interactions are extracurricular activities in organizations, informal interactions are the day-to-day meetings and contact. The academic environment is comprised of the faculty/staff interactions, academic performance, intellectual development, major, study habits. In a departure from the earlier versions, the 1993 Tinto model places all faculty interactions in the academic system leading to academic integration. Classroom experiences with members of the peer group, even though in the classroom, remain under the heading of social integration (See Appendix A-4).

How Is Social Integration Measured and Operationalized?

As a major construct, social integration has been measured and operationalized in various ways. The significance of social integration has varied, especially between four-year and two-year colleges. This segment of the paper is dedicated to examining the way social integration has been viewed and measured by the researchers. In 1971, the year after Spady first presented his theoretical model, he presented his findings from his research. The longitudinal data was collected from 683 first-year students from the University of Chicago in 1965.

Among the variables, friendship support was operationalized with six items on a self-reporting questionnaire that was given in April near the end of the freshman year (Spady, 1971). The items reflected the quality and quantity of relationships with peers. It was only one of four different measures of the student's contacts with others in the college that was used in the analysis. The other elements were in the cluster of variables that he called "structural relations," which included measures of heterosexual relationships, participation in extracurricular activities, and one item that concerned faculty contact. In addition, Spady had a variable that he called social integration. There were eight self-reported items that were intended to reveal the perceived social integration. The items were meant to uncover a subjective sense of belonging or fitting in at the university, the reactions of the general warmth of interpersonal relationship on campus and an absence of conflict with other students. The items were coded to reflect a sense of compatibility or dissonance with the university and its students.

There were 15 known items on the questionnaire about friendships and social integration. In addition there were an unknown number of items about structural relations. The quality and quantity of relationships and the sense of compatibility or dissonance can be considered informal social integration, analogous to Tinto's informal social integration.

The so called "structural relations" such as extracurricular activities and faculty contact relate more to Tinto's description of formal social integration.

Webb (1989) conducted a study of the nine campuses of the Los Angeles Community College District. From this study, Webb developed a model of persistence for community college students. The model differs from Bean and Metzner's (1985) nontraditional model in that Webb has added the variables External Environment, Academic Self-confidence and Expected student/college fit, and assigned social integration to a minor role outside the main effects of the model. In this model, social integration is portrayed as having possible effects from background and external environment and possible effects on goal commitment, expected student/college fit, academic integration and academic intent. Webb used ASSET scores and the ASSET Educational Planning Form, which gathers data related to background and educational plans, to conduct the study. The ASSET test was required of all full-time and part-time students enrolling in math, English, or reading courses during their first semester on campus. The study was to support the proposed theoretical research model for predicting community and junior college student degree persistence. Social integration is depicted in his model as having possible effects on several major concepts (goal commitment, expected student/college fit). But Webb's study failed to include measures of the college experiences, including social integration, which served to weaken the test of his model. Nonetheless, using the ASSET test remains as a very viable means of unobtrusively collecting background information on college students.

The Tinto integration model of persistence has been the most widely researched model. Pascarella and Terenzini (1980) conducted research to examine the predictive validity of a measure constructed specifically to assess the concepts of social and academic integration. They wanted to determine whether a multi-dimensional measure of social and academic integration in Tinto's model would significantly discriminate between freshman year persisters and voluntary dropouts while holding entering characteristics constant. The authors developed fifty-five items, five-response, Likert-type questions to assess the constructs in Tinto's model of intellectual development, peer-group interactions, interactions with faculty, and institutional and goal commitments. This was then shortened to thirty-four items that were judged by the authors to be the items that most adequately tapped the dimensions of the Tinto (1975) model. The items in the Peer-Group Interactions and Interactions with Faculty specifically relate to the social integration of the students and the informal contact with the faculty in the 1975 model (Appendix B). However, it should be noted that many of the questions measure self-reflected growth items rather than peer or faculty interaction.

These items, called the Institutional Integration Scale, were first used in their research at Syracuse University, a large independent university in central New York State with a total undergraduate enrollment of approximately 10,000 students. The university is considered largely a full-time, four-year, residential college. They found that the five institutional integration scales developed for this investigation increased correct identification of persisters and dropouts. "Scores on the five scales alone correctly identified 78.9 percent of the cross-validation persisters and 75.8 percent of the students in the cross-validation sample who later dropped out (Pascarella and, Terenzini, 1980). The authors cautioned, however, that "an additional analysis indicated significant interactions between sex and scores on the peer-group interactions and institutional and goal commitments scales" (p. 73). This led them to believe that the usefulness of the scales in predicting persistence/dropout behavior may to some extent depend on the types of students being researched.

This caution seems to have been overlooked in many subsequent studies, however. A number of studies have continued to test Tinto's major concepts with various populations and in various institutions and have used unique measures, and all or a portion of the Pascarella and Terenzini's Integration Scale as a measure of social/academic integration and institutional/goal commitment. When conducting studies at four-year residential institutions, researchers (e.g. Terenzini and Wright, 1987; Allen and Nelson, 1989) used the entire 34 item Pascarella and Terenzini's Integration Scale, Loppnow (1989) used the Scale plus additional questions, at a four-year commuter college, and as did Halpin (1990) at a two year community college. Pascarella and Chapman (1983) conducted research at three different types of institutions--four-year residential, four-year commuter, and two-year commuter institutions. They found that the Tinto model had predictive validity for the three types of institutions, but that at commuter institutions academic integration had the strongest influence and at residential institutions social integration had a stronger influence. Other researchers at four-year residential and commuter institutions and at two year institutions used parts of the Integration scale plus items of their own. For example, Pascarella, Terenzini and Wolfle (1986) when surveying four-year residential schools added items concerning participation in extra curricular activities and non-class contact with faculty for 10 minutes or more. See the following Table 1. Table 1 shows a group of studies that have used the Institutional Integration Scale (IIS). The table demonstrates the variety of institutions on which the IIS has been used. Overall the results of these studies suggest that social integration has less direct effect on student persistence in commuter schools than in residential schools (Loppnow, 1989; Nora, Attinasi, and Matonak, 1990; Pascarella, Terenzini, and Wolfle, 1986). Is that effect a result of the fact that the students commute or is it a matter of the imprecise survey items on social integration measures that are not relevant for commuting students? This is a question the current study attempts to answer.

Upon close examination, items in the Institutional Integration Scale (Appendix B) in the faculty and peer-group sections appear to measure educational outcomes rather than social experiences. Items such as "My interpersonal relationships with other students have had a positive influence on my personal growth, attitudes, and values", "My interpersonal relationships with other students have had a positive influence on my intellectual growth and interest in ideas" and "My nonclassroom interactions with faculty have had a positive influence on my career goals and aspirations" ask for a self-assessed outcome. This is not consistent with Tinto's (1993) theoretical definition of social interactions in the academic or social system of a college.

Table 1 - Empirical Studies of Persistence

Year	Study	Site	Samp. Size	Enroll Status	Instr Used	All	Part
1980	Pascarella, Terenzini	4 yr	773	Res	IIS	x	
1983	Pascarella, Duby, Iverson	4 yr	267	Comm	IIS +		x
1986	Volkwein, King, Terenzini	4 yr	231	Res	IIS	x	
1986	Pascarella, Terenzini, Wolfle	4 yr	773	Res	IIS+	x	
1987	Terenzini, Wright	4 yr	206	Res	IIS+	x	
1989	Loppnow	4 yr	927	Comm	IIS+	x	
1989	Stage	4 yr	410	Res/Comm	IIS+		x
1989	Allen, Nelson	2 yr/4 yr	165	Res	IIS+	x	
1990	Halpin	2 yr	291	Comm	IIS+	x	
1990	Nora, Attinasi, Matonak	2 yr	253	Comm	IIS		
1991	Grosset	2 yr	449	Comm	IIS+	x	
1991	Bers, Smith	2 yr	311	Comm	IIS	x	
1992	Cabrera, Castaneda, Nora, Hengstler	4 yr	466	Res/Comm	IIS+		x
1992	Cabrera, Nora, Castaneda	4 yr	466	Res/Comm	IIS+		x
1993	Cabrera, Nora, Castaneda	4 yr	466	Comm	IIS+		x

Key
IIS = Institutional Integration Scales
IIS+ = Institutional Integration Scales plus other researcher-designed items
Res = Residential
Comm = Commuter

In other examples, Stage's (1989) study at a four-year college asked about participation in intramural sports as a social integration measure. Grosset (1991) at a two-year college also used four items adapted from Terenzini, Theophilides, and Lorang (1984) such as "felt at home here," and "met students who were interesting". Two researchers used the data from the National Longitudinal Study of the High School Class of 1972 to test the Tinto model at a four-year, full-time residential university (Munro,

1981) and at a two-year community college (Meznek, 1987). The measure of social integration for the Munro and Meznek studies consisted of only one item asking how satisfied the student was with the social life. This item had a five-point Likert scale ranging from very satisfied to very dissatisfied. One study (Ashar and Skenes, 1993) actually inferred the social integration in a college classroom. In a class of managers, they obtained responses on questions of age, how many people supervised, and salary. Then, based on a proportion of mature managers (30 or older, earning over $35,000 a year and supervising three people or more) in class, the authors inferred the social integration; the higher the proportion, the more common interests, the more social integration.

Only a few researchers have tried to tailor the social integration questions specifically for their institutions and populations. For example Nora and Rendon (1990) included social integration factors such as faculty contact outside the class, involvement in extracurricular activities, informal conversations with faculty, reading the college paper, looking at bulletin boards for announcements or special activities, and participating in freshmen orientation. These measures were thought to more accurately capture elements of social integration in a community college. A qualitative approach was taken by Starks (1987) for at-risk adult women in a two-year institution. In a series of interviews, Starks found the social integration took place in the classroom or informally between classes.

In summary, social integration has been defined and operationalized and measured in a variety of ways. Each researcher, in their own way, has attempted to interpret the concept social integration developed by Tinto. But the literature reveals that there is no consistent standard used across studies for nontraditional students. The current study attempts to test (or retest) the IIS scale introduced by Pascarella & Terenzini (1980) along with new measures developed on the nontraditional college population in relation to persistence.

How Is Social Integration Different for Nontraditional Students?

If we accept social integration as important concept in the models of persistence, then the question arises: how does social integration differ for traditional students and nontraditional students? Theorists have stated that, 1) social integration differs between the students for on-campus opportunities for involvement 2) it differs in intensity, and 3) it differs because nontraditional students have many more other social contacts off campus.

Chickering's (1974) analysis of the American Council on Education data suggests that commuter students are significantly less likely than residential students to be involved in the cultural and intellectual life of the institution, or to interact with the institution's major agents of socialization (i.e. faculty and peers). Researchers have found that departure from commuting colleges appears to be influenced less by social events than by academic matters (Pascarella et al., 1981; Pascarella and Chapman, 1983; Pascarella, Duby, and Iverson, 1983; Pascarella and Wolfle, 1985).

Tinto (1993) states that commuting colleges do not have the significant on-campus student communities and therefore does not attract students that are likely or able to spend a great deal of time on the campus interacting with other students or with faculty outside of the classroom. Students are on campus for limited periods of time and attend to only those activities that are required for goal completion. Commuters are afforded fewer opportunities to interact with their collegiate peers in informal ways. They simply do not have the intensity of exposure to these potentially powerful agents of change. Commuting students have been called PCP students, parking lot-classroom-parking lot students (Upcraft, Gardner & Associates, 1989).

What is more prevalent for nontraditional students is that their lives are shaped more by external forces, such as family, work and peers outside the college environment. Two-year college students, like commuting students generally, are much more likely to be working while in college, attending part-time rather than full-time and/or living at home while in college than are students in the four-year institutions. Community college students are likely to experience a wide range of competing external pressures on their time and energies and are unable to spend significant amount of time on campus interacting with other students, faculty and staff.

Tinto (1987) argues, however, that it does not follow as some researchers have claimed, that social contact with other persons on campus may not be important to persistence of students in two-year and non-residential colleges. Tinto agrees with Pascarella, Smart and Ethington (1986) that social and intellectual contact beyond the classroom may be as important, if not more important, to persistence in commuting colleges as it is in residential ones, but that it may apply less for the average student than for those who are marginal for completion of their college goals.

Yet, Bean and Metzner (1985) concluded from their review that social integration is rarely a major factor in persistence decisions for nontraditional students in two-year and four-year commuting institutions and therefore omitted social integration as a primary component of their model. However, they did concede that social integration variables had not been included in the majority of attrition studies with commuter students that they had examined. Even though Bean and Metzner omitted social integration as a major factor, they endorsed further research based on the inconsistencies they found in empirical studies of nontraditional students. They, therefore incorporated social integration variables as an addition to the model's main design. (See model as Appendix A-5). This suggests that theorists clearly do not agree on the importance of social integration for nontraditional students. It also suggests the need to study an institution such as a community college to gain greater clarity on the significance of social integration.

To What Degree Does Social Integration Predict Persistence for Traditional and Nontraditional Students?

Tinto (1993) and Bean and Metzner (1985) have indicated that the empirical evidence for social integration for nontraditional students is mixed and confounded with varied measures. It becomes almost impossible to compare across institutions. No studies exist that report results of persistence of nontraditional students in contrast to traditional students at four-year residential institutions, but there are studies that report differences for nontraditional students attending four-year and two-year commuter institutions.

Pascarella and Chapman (1983) conducted a study that explored persistence patterns of social and academic integration across three institutional types: four-year residential, four-year and two-year commuter colleges. Their sample was limited to first-time freshmen enrolled full-time in degree-granting programs, but they used the same measurement for social and academic integration for all three institutions. The variance in persistence/withdrawal decisions explained by the whole model ranged from 13 to 17 percent, and the contribution of the academic and social integration variable for four-year commuters was one percent and for two-year commuters it was .10 percent. Results indicated that, after controlling for differences in student characteristics, patterns of student involvement in the academic and social life of their college differed significantly by institutional type. Students in residential institutions tended to be higher in both academic and social integration than students in two-or four-year commuter settings. However, it should be noted that these measures were more likely to have been developed with traditional college students in mind.

While differences existed in both the academic and social systems, the differences associated with the social environment were most pronounced in their studies. Two-year college students were the least socially integrated of the college samples, resident university students were the most socially integrated, and four-year commuter students fell somewhere in between. Two-year college students in their sample reported far less informal contact with faculty on academic and non-academic matters, and fewer informal conversations with peers than students in other college settings. The authors allowed that the "weak explanatory power of the model could be a function of inadequate operational definitions of the model's variables" (p. 99). This research was also limited by their use of secondary analyses of the CIRP data base, and it did not provide for operationalized definitions of the constructs that might be better suited for two-year college students.

Motivated by the previous findings, Pascarella designed a persistence study with Smart and Ethington (1986) that focused on student persistence who began their postsecondary education in two-year colleges. They suspected the single-institution attrition studies conducted at two-year colleges had confused transfer behavior with drop-out behavior. Their sample was drawn from students enrolled in 85 community colleges who, at the time of initial enrollment, indicated that they aspired to a bachelor's degree. This group was tracked over nine years in order to measure persistence to baccalaureate degree completion. The results showed that while much of the influence of student pre-college traits were indirect, the two variables with the most consistent pattern of significant positive effects on degree persistence and degree completion were academic and social integration at the last college attended. Based on these results, the authors concluded that Tinto's model was reasonably useful in accounting for the long-term persistence/withdrawal of students who began their education at two-year schools.

Halpin (1990) conducted research specifically testing the applicability of Tinto's model to a community college. The sample consisted of 291 first-time, full-time freshmen enrolled in a nonresidential community college. The academic and social integration was assessed using the Institutional Integration Scale of Pascarella and Terenzini (1980). The results indicated that the Tinto model of persistence does have utility for community colleges. Consistent with other studies regarding commuting students (Pascarella, Duby, Miller and Rasher, 1981; Pascarella, Duby and Iverson, 1983; Pascarella and Wolfle, 1985), Halpin concluded that academic integration had a greater influence than social integration. In a setwise discriminant analysis, the integration variables significantly discriminated among the three group of students (persisters, withdrawers, and dismissals), even after the effects of the background and environmental variables were held constant.

Bean and Metzner reviewed studies conducted at four-year residential schools, four-year commuter schools, and two-year schools. Their findings were mixed. But generally they found that numerous studies supported the positive relationship between persistence and social integration for four-year residence-oriented students (e.g., Everett, 1979; Nelson et al., 1984; Pascarella and Chapman, 1983). The literature that compared commuter students with residential students reported that the commuter students had less social integration at college (e.g., Chickering, 1974; Everett, 1979; Nelson, 1982).

Moline (1987) tested an adaptation of the persistence models of Tinto and Bean at a commuter college setting. The model did not include social integration variables. Instead, it placed major emphasis on academically related variables and also proposed that kind and amount of student financial aid awards were important to persistence. Contrary to expectations, Moline found that none of the financial aid variables had a significant effect on student persistence. Since the tested model, which placed emphasis solely on academic-type variables, accounted for a large percentage of the variance in persistence, Moline then concluded that the exclusion of the social integration component of the model in a commuter setting was appropriate. However, this was probably a misspecified model as it did not constitute a direct test of social integration on persistence.

In reviewing the literature for traditional students, Pascarella and Terenzini found that Tinto's (1975) model explained 25.9 percent of the variance between persisters and voluntary withdrawals with both integration factors contributing 23.8 percent of that total. In their research Terenzini and Wright (1987) found the model explained 23 percent of the variance and Pascarella, Terenzini and Wolfle (1986) report 19.6 percent of the variance explained by Tinto's model. Pascarella and Chapman, in their research on residential and commuter institutions found 13-17 percent of variance explained. The literature provides mixed results for the importance of social integration and certainly modest, at best, percentages of explanation of the variances. The student's social integration was in some cases statistically significant but modest in effect on persistence.

Social Integration for Subpopulations

This section addresses the degree to which social integration is unique for each subpopulation and the degree social integration predicts persistence for different subpopulations of students. Older adults, commuters and part-time students are subsumed in our definition of nontraditional students. However, research is limited for subpopulations. There are some unique findings in the research for each group.

Adult Students

Many of the problems inherent in being a freshman are magnified in older adult students because college is usually not their only priority. Many older students work full-time, have spouses, children and commitments in the community. So managing their time becomes an important priority. Another problem is that many of the older students have been away from any form of formal education for a number of years. Therefore they display anxiety about their study skills, math skills, English skills and the ability to compete with the younger students. They worry about being embarrassed by asking dumb questions or giving dumb answers; they wonder whether they can learn as well or as fast as the younger students; they fear that they might fail or get low grades (Schlossberg, Lynch and Chickering, 1989). When they attend institutions where they are clearly in the minority, they feel out of place and even out of sync with societal expectations attributed to specific age groups. They feel the pressure to manage time, study, cope with fellow students, faculty and staff all with a variety of values and cultures. They question if they can fit in (Upcraft, Gardner & Associates, 1989). Their social integration is a matter of becoming comfortable and involved in the course and with other students (Coe, Rubenzahl and, Slater, 1984).

In a study using Tinto's Model that compared younger (under 25 years) students and older students (25 years and older) in a community college, Grosset (1991) used parts of the Institutional Integration Scale. Grosset found that the two most important variables in the discriminant function for the younger group were academic integration variables related to the quality of out-of-classroom interactions with faculty and the amount of cognitive progress the students felt they made during the semester. The most important variable in the discriminant function for the older students was the pre-entry attribute measured by the student's self-assessment of study skills. Older persisters generally felt their study skills were better than nonpersisters. Social integration proved to not be particularly influential for the younger or older groups of students.

Commuter Students

Simply trying to define commuter students is a very complex task and then extending the discussion to social integration for commuting students becomes almost impossible. Four historical cycles of research can be traced for commuter students. In the 1950s, there were mostly descriptive studies that focused on commuter students' characteristics. In the early 1970s, commuting students still were considered anomalies and research focused on students' interaction with campus environment. Later in the 1970s the research interest turned to the adult student. Although almost all older students are commuters, most commuters are not older students. In the 1980s where commuting students have become the norm, the attention is focused on what the institutions can do to adjust to the needs of a changing student population (Stewart, Merrill and, Saluri, 1986).

One of the problems studying the commuter students is the heterogeneity of the group. For example, the thirty-year-old taking two business classes at night; the eighteen-year-old living with her parents and attending full-time; the unemployed steelworker, back for a semester, desperate to learn a new skill; the homemaker with children in school who will not take a class that begins after 2:00 p.m., all of these and more are commuting students. So it becomes difficult to address a singular social integration variable for commuters. But there are some obvious parallels between nonpersisters and commuters in terms of their lack of involvement, interaction, and integration with the college experience. For example, Chickering's (1974) book, Commuting Versus Resident Students: Overcoming the Educational Inequities of Living Off Campus, describes commuter students as unlikely to identify themselves with the college largely because of their continued affiliation with high school friends, or employment, or community groups. He found they have fewer friends at college, participate less in extracurricular activities, rarely assume positions of leadership, and seldom attend collegiate cultural events. In addition, Chickering sees a "business like" relationship between commuters and faculty in that most contact occurs in the instructor's office and seldom outside class. "In every area commuters are less involved than their resident peers" (p. 63).

In the 1990s, research on student persistence has begun to focus on four-year and two-year commuter institutions (e.g. Halpin, 1990; Cabrera, Nora and, Castaneda, 1993; Ashar, Skenes, 1993). An interesting study by Christie and Dinham (1991) employed open-ended interviews with 25 first-time, full-time freshman to gain insight provided through freshmen perceptions of college experiences that influenced their social integration. Eight of the twenty five students had at one time lived off campus. The off-campus students spoke of their lost opportunities to meet other students and described the difficulties of meeting students in classes. The on-campus students perceived more opportunities to gain information about other social activities on campus. They found out about campus social opportunities from flyers, residence hall assistants, and other students. More on-campus students participated in extracurricular activities and expressed the perception that these activities made the difference in their persistence to the second year of college. The most influential external experiences for the students were high-school friends and experiences with family. Several factors mediated the varying impact of interactions with high-school friends on social integration. Interactions with high-school friends not attending college seemed to have the most negative impact on the transfer of high-school social ties to college friends, whereas interaction with high-school friends attending college elsewhere tended to enhance this transfer. Interactions with high school friends attending the same university further enhanced the positive influence on social integration by providing the freshmen with an immediate support system that provided avenues to social integration through introductions to other students and to extracurricular activities.

Part-time Students

In 1989, the proportion of all students attending part-time was 41.6 percent of total undergraduate enrollment, in the public two-year school that figure rose to 65.7 percent (Tinto, 1993). The prospect for part-time students to graduate with a four-year degree is dismal at best. It is estimated that delayed entrants who enter less than four-year institutions and who enroll part-time are five times less likely than immediate full-time four-year entrants to obtain a four-year degree (Carroll, 1989).

Since many part-time students are commuter students, the same social integration conditions that plague commuting students also apply for part-time students. The research on persistence for part-time students is extremely limited, however. Most studies do not even collect data concerning attendance patterns, but prefer to use a first-time, full-time freshman sample. A few studies (e.g. Grossett, 1991; Webb, 1989; Nora and Rendon, 1990) have collected data on full-time, part-time attendance and display the information in the descriptive statistics, but fail to report any significant statistical results for part-time students. Voorhees (1987) investigated the influences of demographic variables and the influence of academic and social integration, borrowed from persistence models designed for four-year institutions. The sample consisted of 224 full-time students and 139 part-time students. Voorhees reported no significant findings for part-time versus full-time students.

Additional Student Types

Most institutions, especially the large ones, are made up of a variety of academic and social communities that have their own unique patterns of intellectual and behavioral interactions. At times the term "student subcultures" has been used to describe the diversity of student communities on campus (Kuh and Whitt, 1989). Congruence, or compatibility, may occur within any one of these communities or subcultures without occurring across the institution generally. It is quite possible for the person to be out of sync intellectually and socially with the majority of persons or groups within the institution and still find sufficient social and intellectual contact and support for continued persistence (Tinto, 1993). Some aspects of persistence models are more important for some individuals than for others. Researchers have not been successful in pinpointing which experiences are the most important facilitators of persistence for particular types of students. In attempting to address this problem, researchers have begun to examine other student populations such as women and minorities (Stage, 1989).

Women

Pearson, Shavlik and Touchton (1989) refer to women as the "new majority" as they currently comprise 55 percent of all persons enrolled in college. This new majority consists not only of traditional age women, but also returning women; those women that are returning to school after interrupting their education for other responsibilities. Women students are also diverse in age, race, ethnic group, social class. Each bringing their own life experiences with them. But the research on persistence begins to accentuate the differences in the importance of social integration for women.

Several studies have shown distinct gender differences in social integration for women. Spady (1971) reported that the variable, Structural Relations for women, made a 19.7 percent unique contribution to the stepwise regression as opposed to a 12.1 percent for men. He found that friendship support was by far the dominant link to social integration for the women in his study. In a validation of Tinto's model on particular populations, Pascarella, Smart, and Ethington (1986) found important gender differences in the long-term persistence of community college students. They suggested that pooling male and female samples may indeed mask important differences in patterns of effects on persistence. Using qualitative methods, two studies conducted research with women at two-year institutions. Weidman (1985) concluded that students more than faculty were seen as important social contacts for the women students. Neumann (1985), although only using a sample of 30 women at a community college, found social integration to be very important.

Using a sample of adult women (over 24 years) students at a community college, Starks (1987) conducted a qualitative study to determine which variables influence "high-risk" women to persist and "low-risk" women to withdraw. The interviews revealed that social integration took on a different meaning for adult women. They seldom took part in any of the peer group activities or in the organized student activities. All the subjects interviewed exhibited the "parking lot syndrome." The social life for these adults occurred in the classroom or informally between classes. Institution persisters had positive contact with other students, both young and old. They socialized during lunch with students in the cafeteria and they studied together between classes. They enjoyed group work in the classroom and made friends in their classes. System leavers made fewer friends and some of their friends were apt to be dropouts as well. They avoided participation in peer group classroom activities and often went to the library to work alone between classes. Starks suggested a re-evaluation of the definitions of social integration for adult women.

Applying Tinto's model to women residents in a four-year and a two-year institution, Allen, and Nelson (1989) used measures of student activities of two hours or more per week, frequency of nonclassroom contacts with faculty and the Pascarella and Terenzini's Integration Scale. They used the four items that were the highest loading items on a factorially derived scale for student's nonclassroom contact with faculty and the extent and quality of the student's relationships with student peers. The results showed that in both institutions studied, it was student interaction with the social system that most strongly affected institutional commitment and, subsequently, persistence for the women. They further suggested that research on the reasons for withdrawal may be very different depending upon which subpopulation of students one is speaking of and recommended that future retention studies continue to focus around identified issues and target populations.

Summary and Shortcomings of Existing Research

Nontraditional students differ from traditional students in age, residency, and enrollment status. Social integration is defined differently by different theorists and operationalized and measured in a wide variety of ways by researchers. Even the term persistence is operationalized differently. Continued persistence can mean year to year, semester to semester, or class to class. The first problem highlighted by the literature review is the multitude of definitions for social integration, persistence, and even for the term nontraditional student. The replicabilty of the studies is diminished when such varying measures are used. Further, it is possible that the weak explanatory power of the models could be a function of inadequate operational definitions of the model variables (Pascarella and Chapman, 1983).

Social integration has been shown by the literature to differ for traditional and nontraditional students, and is characterized by a lack of involvement by the nontraditional students. The lack exists because the opportunities to interact with faculty and peers is severely limited. Because of the differences in opportunities for involvement between traditional and nontraditional students, it appears that two separate comprehensive theoretical models are needed. One for the first-time, full-time, under 25, resident student at a four-year institution and another for the nontraditional students. Their institutional experiences vary primarily because the type of college they attend offers different types of opportunities, and the nature of the peer groups differ as well.

Most student persistence studies have not found social integration to have a significant impact on retention, but, because studies have not incorporated appropriate indicators of social integration, this lack of effect may be the result of inappropriate social integration measures for nontraditional students. The literature on commuter students, community college students, and adult students has shown there are vast differences between these two types of students. Therefore the social experiences of traditional and nontraditional students are very different. The literature review has shown that no other study has captured how nontraditional students would define social integration for themselves. Tinto (1993) describes the collegiate social system as the activities that:

> centers about the daily life and personal needs of the various members of the institution, especially the students. It is made up of those recurring sets of interactions among students, faculty, and staff that take place largely outside the formal academic domain of the college. For students, at least, it goes on in large measure in the residence halls, cafeteria, hallways, and other meeting places of the college. Its activities focus on the social as well as the intellectual needs of its members (p. 106-107).

Perhaps different subgroups of students preclude using the same measure for all students. Currently in many studies a single measurement, the Institutional Integration Scales, is being used with all groups and subgroups of students. Some studies use just the Scale, and others use a partial Scale and insert their own partial measures (see Table 1). The differences between the subgroups dictate that a separate measure be used to indicate their social integration.

The element that is missing in all the research about different social integration for nontraditional students, considering their diversity, is the lack of literature of a clear definition of social integration for nontraditional students. It has been operationalized, measured in various ways, but in no instance does the literature describe social integration for nontraditional students. When the Institutional Integration Scale was developed, Pascarella and Terenzini (1980) acknowledged that the items were a reflection of what they believed was social integration and the scale was primarily developed for four-year residential students. As mentioned, some researchers devised different items, but there is no reason to believe that they, too, were not just a reflection of what researchers believe was social integration for nontraditional students. Therefore, research has not been entirely successful in predicting persistence for those subpopulations.

This study follows Tinto's (1993) suggestion that while multi-institutional studies are helpful for aggregate student departure information, it is the institution-specific study that provides information on student departure that is of more direct value for development of institution-specific policy. While it limits the generalizability of the findings, it does allow a clear pattern of student behavior that will ultimately benefit programs at a particular institution.

CHAPTER III

METHODOLOGY

This research is a quantitative, longitudinal, single-institution study using a multidimensional measure of social and academic integration based on Tinto's 1993 model of student persistence. A new instrument, called the College Experiences Survey (described in a later section), was developed specifically for examining nontraditional students attending a suburban community college.

The purpose of this research is two-fold. First this research is designed to determine if the College Experiences Survey (CES) accurately predicts between first-year, first-term persisters and voluntary dropouts. Second, the study seeks to determine if the newly developed social integration items in the CES scale are a better assessment for nontraditional students attending a community college than the social integration items contained in the Institutional Integration Scale (IIS) previously used in research. Therefore, the research questions guiding this study are as follows:

1. To what degree is the College Experiences Survey, an instrument designed specifically for the population served by a community college, a valid predictor of persistence of college students?
2. To what degree is the College Experiences Survey a better assessment of social integration of the population served by a community college than the Institutional Integration Scale previously used in research?

3. To what degree does social integration have an impact on a nontraditional student's decision to re-enroll as an indicator of persistence in a community college?
4. To what degree does social integration have an impact on women, and part-time students and their decision to re-enroll the next term?

Setting

The study was conducted at Schoolcraft College, a suburban community college in southwestern Michigan. Schoolcraft College has approximately 14,000 full and part-time students. The average age of the student body is 28 years. According to the Office of Institutional Research IPEDS report, the student body is comprised of approximately 94 percent White, 3 percent African American, 1 percent Latino students. The remaining 2 percent of the student body consist of Asians and Native Americans. The 1995 retention rate from fall term to winter term is approximately 68 percent.

Description of the Population

The ideal situation would involve surveying all first-applicant freshman entering in the Fall of 1996. However this task is fraught with problems. First, not all first-term freshman students at community colleges intend to return for a second semester, and there is no organized method to discover whether all entering students are intending to return for a second semester. Second, all first-applicant freshman either complete an ASSET or CPT placement test on site, or forward their ACT scores. While the ASSET and CPT test-takers complete an Educational Planning Form and a number of local Schoolcraft questions that include information about the pre-entry attributes of each student, the students that have the ACT scores forwarded to the college do not complete the data sheet of pre-entry attributes and do not answer the question of whether they intend to return to Schoolcraft College in the winter, 1997 semester. Information on this test form helps to distinguish those students who enter interested in returning the following term from those students interested in taking an occasional course for self-improvement. Therefore for this study, the sample consisted of only those students who completed an on-site ASSET or CPT placement test. According to the testing center at Schoolcraft, in 1995 this represented approximately 75 percent of all new applicants. This approach was also used by Webb in his 1991 research study.

The ASSET test is a timed paper and pencil test done in a group and the CPT test is an untimed computer generated test. The individual student chooses which test to complete. The factors influencing the student's decision are time and computer comfort level. These two tests are placement tests that new applicant freshman students are required to take for placement in English, reading, or math classes at Schoolcraft College.

As stated, the reason this population has been chosen is because these students answer a series of biographical questions before completing the tests (Appendix C). In addition to other local questions, (questions designed for this institution only) the testing center has agreed to include a local question that will be pertinent to this study. The answer to that question will indicate whether or not the student intends to re-enroll the following winter semester (Appendix D). Appendix E contains three pages of tables that present the descriptive statistics of this group of students for the past five years. As you can see, for fall 1995, 734 students took the CPT test and 1048 students took the ASSET test and 510 students had their ACT scores sent to Schoolcraft College. For fall 1996, 1766 students took the CPT and ASSET Placement tests. Of those 1766 potential students, 1263 actually attended Schoolcraft College in the Fall of 1996. Which means that out of a total of 2238 first-time Schoolcraft students, 1263 or 56.4 percent of the new students took the placement tests. This is a lower percentage than in 1995. The decrease is a result of more students forwarding their ACT scores and more transfer students attending Schoolcraft College who are not required to take the placement tests.

A computer printout was generated by Information Services of Schoolcraft College of all the ASSET and CPT test takers currently attending Schoolcraft College. Since so few students indicated they did not intend to attend the winter semester, it was determined to survey all students on this list. This list constituted the population of this study. Subsequently a mailing label printout was generated for the study.

Data Collection

During this longitudinal study, the data was collected at three points over the 1996 fall semester and the 1997 winter semester. (See Figure 2). The first point of data collection was at the time of orientation prior to the 1996 fall semester. At this point, the information gathered was primarily the pre-entry attributes; family background, skills and abilities, intentions, goal and institutional commitments and external commitments. One essential question that was asked was whether or not the student intended to attend the 1997 winter semester at Schoolcraft College. (See Appendix D).

The second point of data collection was approximately eight weeks after the start of the 1996 fall semester. At the time of the first mailing all 1766 students that took the tests were mailed a survey. This survey collected the information on the institutional experiences in the academic and social systems specified in the 1993 Tinto model. This mailing revealed the fact that over 500 students that took the tests actually did not attend Schoolcraft College in the fall of 1996. The repeat mailing was scaled back to include just those students that did attend in the fall of 1996.

The timing for the mailing of the survey was important. Enough time must elapse so that the students made a connection with faculty and peers, yet not so much time elapsed that students had already begun to drop out of school. According to Blanc, Deburh and Martin (1983) six to eight weeks after the term begins is the optimum time to distribute the survey. Approximately two weeks after the original mailing, a follow-up mailing was sent out. In the weeks following, a follow-up phone call was made to the homes of approximately 50 percent of the students to ensure a good response rate. In some cases, the survey was completed by phone.

There was an incentive to complete and return the survey. On the bottom front of the survey there was a tear-off portion of the survey for the student to record their name and address and phone number which was placed in a drawing for two $100 cash awards. These cash awards were provided by funds from the researcher and an educational matching contribution from Ford Motor Company. Included with the survey was a letter informing the student of the research and a request for their cooperation. An article appeared in the school newspaper about the research and the importance of returning the surveys. The surveys were coded so that the researcher could track the student's retention. Each student was assigned a number on the computer printout and that number was repeated on the survey that was sent to that student.

The third point of data collection was after final registration of the 1997, winter semester. At that time, the registrar's office generated a list of students attending the winter 1997 semester. That list was examined to determine which of the surveyed students returned or persisted to the winter term. Information about each student's GPA was also gathered at that time. Figure 2 shows the approximate time frame for the study.

Data Sources

The sources for the measure of the constructs were primarily from three documents: ACT ASSET Educational Planning Form, ASSET Local Items, and the College Experiences Survey. Additional data was collected from the Registrar records, specifically reenrollment and first-term GPA information.

The constructs included in Tinto's 1993 model include Pre-entry Attributes, Goals/Commitments, Institutional Experiences, Integration, Subsequent Goals/Commitments and the dependent variable, Outcome, or departure decision. These constructs (indicated in Table 2) are operationalized by the data collected prior to enrolling and data collected with the College Experiences Survey and then the data collected from the Registrar after the start of the 1997, winter semester. The 1993 model in Figure 1 provides the basic constructs that are part of this study. The dependent variable and various independent variables were operationalized as described in Table 2.

FIGURE 2
STUDY DESIGN TIME FRAME: DATA COLLECTION TIMEPRINTS

Testing Tinto's Theory of Institutional Departure on Community College Student Persistence
with the College Experience Survey

TIME ONE **JULY/AUGUST, 1996**	**TIME TWO** **OCTOBER, 1996**	**TIME THREE** **JANUARY, 1997**
Information gathered from first-time, first-term student ASSET and CPT placement tests on background and educational goal	College Experiences Questionnaire administered to first-time first-term students who completed an ASSET or CPT placement test and indicated reenrollment	Registrar's records were checked to determine what students reenrolled

Table 2 - Operationalization of Key Variables

Constructs in the Model:	Operationalized As:
Independent Variables: Family Background:	Combined household annual income Mother's Formal Education Father's Formal Education Parent-Attained bachelor's degree Who influenced decision to attend Schoolcraft
Skills and Abilities:	ASSET scores
Intentions:	Intent to reenroll Attending college is important
Commitments:	How committed are you to completing a degree? Is Schoolcraft first, second, or third choice?
Institutional Experiences: Academic	Academic performance Student perceptions of academic and intellectual development Faculty /staff interactions inside and outside classroom Asked faculty for help Sought Faculty advise Student perceptions of study habits Utilization of academic student services
Social	Classroom-focused, peer-group interactions Informal peer-group interactions Extracurricular activities
External Commitments:	Single parent Number of dependents Financial Difficulties Child Care Difficulties Time Conflicts
Dependent Variable: Reenrollment	Students who enrolled in the fall, 1996 semester and reenrolled in the winter 1997 semester.

Measures and Constructs. Table 3 reflects all the key constructs in the 1993 Tinto Model of institutional departure. Measures used to measure each and the data sources are indicated in the table. The measures included in this analysis were operationalized according to seven constructs: pre-entry attributes, goals/commitments, college experiences, integration, external communities, goals/commitments, and outcome. What follows is a discussion on each of the constructs and measures. These represent aspects of the students' life that are brought with him or her to college and the experiences they encounter at the institution.

Pre-entry Attributes. The pre-entry attributes are represented by two characteristics: family background, and skills and abilities. The family background include demographic measures, and socio-economic measures. Skills and abilities are assessed by the ASSET scores on math.

Goals/commitments. The goal and commitments are represented by two characteristics: intentions and commitments. Intentions are assessed by questions contained in the ASSET Local items. These include questions about how important is attending college, and the students' specific intention to return to Schoolcraft College for the 1997 winter semester. The commitment is assessed by two questions: is Schoolcraft their first, second, or third choice, and how committed are they to attaining a certificate or degree?

Institutional Experiences. The institutional characteristics were represented by experiences in both the academic system and the social system at the college. Experiences in the academic system were measured by academic performance (GPA), and assessments of academic and intellectual development, and faculty and staff interactions. In the social system, the assessments were of extra curricular activities and peer-group interactions.

Table 3 - Variables and Data Source For Regression Analysis

Variables	Coding	Data Source
PreEntry Attributes		
Family Background		
Gender	2=Female, 1=Male	CES
Age	1=Under 20, 2=20-24, 3=25-29, 4=30-34, 5=35 and over	CES
Marital Status		CES
Married	2=Married, Else=1	
Single	2=Single, Else=1	
Single w/child (referent category)	2=Single w/child, Else=1	
Combined household annual income	1=1,000-24,999, 2=25,000-49,999, 3=50,000-74,999, 4=75,000-99,999, 5=100,000 or over	CES
Receiving Financial Assistance	1=Yes, 0=No	CES
Mother's Formal Education	1=Grade school/8th grade, 2=High school/GED, 3=Some college/2-yr. degree, 4=4-yr. degree or more	ASSET Local Item
Father's Formal Education	1=Grade school/8th grade, 2=High school/GED, 3=Some college/2-yr. degree, 4=4-yr. degree or more	ASSET Local Item
Parent-Attained bachelor's degree	1= Yes, 0=No	ASSET Local Item
Who influenced decision to attend Schoolcraft		ASSET Local Item
None	2=None, Else=1	
Relatives (Parents, Spouse, Friends)	2=Relatives, Else=1	
External Influence (referent category)	2=External influence, Else=1	
First Time College Student	1=Yes, 0=No	CES
Skills & Abilities		
Placement scores	Numeric ASSET 23-55 CPT 1-120 Standardized	ASSET Test

Entry Goal/Commitments		
Intentions		
Intent to re-enroll	1=Yes, 0=No	ASSET Local Item
Attending college is very important to me	3=Very true, 2=Somewhat true, 1=Not true	ASSET Local Item
Commitments		
How committed are you to completing degree?	5=Strongly committed, 4=Somewhat committed, 3=Not very committed, 2=Uncertain about continuing at Schoolcraft, 1=Do not intend to complete an academic program at Schoolcraft	ASSET Local Item
Schoolcraft first choice?	4=First choice, 3=Second choice, 2=Third choice, 1=Less than third choice	ASSET Local Item
Institutional Experiences		
Academic System		
Academic Performance - GPA	0.0-4.0	Registrar
Academic & Intellectual Development	**IIS 4 (Academic & Intellectual Development), IIS 5(Academic Impact), ***CES2 (Good Study Habits)	CES
Faculty/staff interactions	IIS2 (Faculty Interactions), IIS3 (Faculty Concern for Student Development and Teaching), IIS7 (Perceptions of Faculty), CES6 (Faculty Assistance)	CES
Full Time (Credit hours)	1=12 credit hours or more, 0=less than 12 credit hours	CES
Social System		
Peer-group interactions	IIS1 (Peer Group Interactions), CES 1 (Belonging to Schoolcraft Community), CES 3 (Peer Academic Cooperation), CES4 (Peer Classroom Assistance), CES 8(Interaction Needs) CES 12(Peer Relations)	CES

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External Commitments		
Single parent	1=Yes, 0=No	ASSET Local Item
How many dependents	1=0, 2=1 or 2, 3=3 or 4, 4=5 or more	ASSET Local Item
Conflicting demands	CES5 (Childcare Difficulties), CES7(Time Conflicts)	CES
Financial Difficulty (q68)	4=Often, 3=Sometimes, 2=Rarely, 1=Never	CES
Dependent variable Re-enroll winter semester	1=Yes, 0=No	Registrar records

**Scales for IIS = 5=strongly agree
4=agree somewhat
3=not sure
2=disagree somewhat
1=strongly disagree

Scales for CES =4=agree strongly or often
3=agree somewhat or sometimes
2=disagree somewhat or rarely
1=disagree strongly or never

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External Commitments. The external commitments were assessed by questions about marital status, being a single parent, number of dependents, and conflict with studies and other commitments. These were assessed using measures derived from the College Experiences Survey.

Goals/Commitments. This particular set of goals/commitments were assessed approximately eight weeks into the semester with questions regarding importance of graduation, confidence of making right decision of attending this college, likelihood of registering again in the winter, major and importance of good grades.

Outcome. The outcome was a dichotomous variable (yes or no) determining reenrollment in the winter, 1997 semester. This was obtained from the institution's registrar by the third week into the winter, 1997 term.

Description and Development of the College Experiences Survey

Quantitative research is only as valid as its measures. The literature review reveals that social integration has been defined and measured in a variety of ways. The most popular measure used by many studies, the Institutional Integration Scale developed by Pascarella and Terenzini (1980), was originally developed for traditional four-year students at a residential institution. However, as shown in the literature review, researchers have continued to use the Institutional Integration Scale measure for both traditional and nontraditional students. This instrument of 34 items has five scales; Peer-Group Interactions, Interactions with Faculty, Faculty Concern for Student Development and Teaching, Academic and Intellectual Development, and Institutional Goal Commitments. In Tinto's 1993 model, faculty/staff interactions are associated with the academic system, and the peer-group interactions are associated with the social system. These 34 IIS items and then approximately 20 additional social integration items specifically developed for this study will be included in the College Experiences Survey. The new survey items formulated had relevancy for nontraditional students specifically in the areas of peer-group and faculty interactions.

A pre-test was given of these new social/academic integration items only. These items were given to a convenience sample of students to determine readability and understanding and to make revisions. Finally these new integration items were placed in the College Experiences Survey. This then constituted the complete survey (Appendix F).

Pilot Study

Original formulation of the new survey items were constructed from recent research on social integration for nontraditional students. A pilot study was conducted at Schoolcraft College (Allison, 1996) to develop themes of social integration more relevant for nontraditional students.

The purpose of the pilot study was to analyze the social integration behavior of nontraditional students. While academic integration has shown a direct relationship to persistence for both traditional and nontraditional students, research has shown little or no significant relationship of social integration for nontraditional students (Halpin, 1990; Allen and Nelson, 1989; Webb, 1989; Pascarella, Duby and Iverson, 1983).

The objective of the pilot study was to isolate the behavior of nontraditional students that reflect their educational, social integration. The study defined nontraditional students as 25 years or older, part-time students, or full-time commuting students. The literature on college persistence provided a background for the study, and Newcomb's peer-group formation theory was used to help understand the social integration analysis. The research was based on the analysis of two separate focus group discussions at Schoolcraft College. The focus group methodology was used because it is an excellent preliminary procedure to develop interview questions or questionnaires for future research. The group dynamics provided a livelier discussion, and participants were encouraged to compare their attitudes and opinions and narrate their experiences.

Two separate focus groups, male and female, were conducted in spring of 1995 with 16 male and 10 female volunteers recruited from various curricula. The ages of these students ranged from 18 to over 45 years. Volunteers rather than randomly selected subjects were recruited because it was thought that those students who would volunteer would be the type of students who would be more socially integrated and would be more likely to offer significant input. There were distinct differences in the demographics between the groups including age, marital status, number of children and college attendance. The ages of the females were fairly evenly split between the age ranges, but the males were more disproportionate in the 18-24 years. Seventy percent of the females were married with children and only 25 percent of the males were married. More than 81 percent of the males attended college full-time, while only 40 percent of the females attended school full-time.

A set of open-ended questions was devised to derive information about the social contacts and relationships formed in a community college. A trained male moderator was used for the male focus group, and the female researcher conducted the female focus group. The focus groups began with introductions of each member and then continued with the list of questions. The students were asked basically three questions: 1)What is one thing that has happened to you that has made going to Schoolcraft an enjoyable experience? 2)Name a way that you have formed friendships (additional queries about telephones, study groups, incidental or deliberate meetings before or after class, use of clubs or other activities). 3)What groups of people do you know that are the most supportive of your attempts to go to school? (queried about family, friends, faculty, staff). Then the students were asked to summarize their social integration activities. After an hour of discussion, there was a general wrap up.

The topics discussed among the gender groups were different. The women spoke more of the need for support and friendship. The males talked about how they met friends here at school because of the curriculum. While the women spoke often throughout the discussion of support, the males mentioned support only slightly and did not refer back to it often. On the other hand the males talked a lot about faculty and whether they were good or bad, and whether their experiences were good or bad with the various instructors. This tended to build on Spady's findings that satisfaction for males is dependent on grade performance while female satisfaction is related more to social integration. Newcomb's (1962) criteria, pre-college acquaintances, propinquity, and similar interests and attitudes, for developing peer groups, were evident in the discussion. However, they were not comprehensive enough to explain the whole process of social integration at the institution. Participants also revealed stories of peer and faculty support.

The males especially, discussed the benefits of helping others and the satisfaction derived from this activity. Several times the point was made that the size of the institution with its smaller class size also allowed for greater recognition of fellow students in the classroom. This situation made it easier to begin a conversation with those persons seen more than once in different classes. The women constantly returned to the issue of peer and faculty support. They were adamant about the power of a supportive friend to keep them returning to the classroom. For example, one woman said, "I learned early on...you have to make buddy systems to be able to make it in class." Another said, "It really helps if you find that niche, support group at school." Still another said, "last semester, I had a much harder time. I mean, it was a lot more stressful for me, and this year, I feel more relaxed with people because I know I have someone to call if I missed something."

The study was designed to begin identification of the behavior that was indicative of social integration for nontraditional students. The use of focus groups provided the opportunity to directly ask the students how they interacted with peers, faculty, and staff. Newcomb's framework on peer groups was useful in guiding the analysis. The results indicate that generally the relationships were not formed based on precollege acquaintances, but that the focal point is the propinquity of the classroom.

This emphasis on the classroom may indicate more reliance on institutional social integration than indicated by the research conducted by Bean and Metzner (1985).

While Tinto (1993) stipulates that the processes of academic and social integrations are mutually interdependent and reciprocal, his model of persistence tends to point to a distinct separation. The findings in this research, however, definitely highlight the importance of the classroom in the formation of student peer groups. In both focus groups, conversation and narratives revolved around the classroom as the catalyst for support, friendship and increased learning. This merging of the social and academic integration may be more pronounced and more important in institutions teaching nontraditional students, such as community colleges.

The similarity of attitudes and interests was reflected by the classes in which the students were together, creating common interests or common problems, even though the time frame can be just one semester, or the duration of the one class. This reflects Spady's (1970) definition of "social integration as having attitudes, interests and personality dispositions that are basically compatible with the environment and close relationships with others in the system."

The data presented on nontraditional students builds less on Tinto's (1987) separation concepts in the rites of passage and more on the transition and incorporation concepts. The separation rite was interpreted as a decline in the interactions with members of a group such as a parents and siblings. Due to the age of many nontraditional students, the physical separation from parents has occurred much earlier in their lives. But, the transition rite, meaning interacting in new ways with members of a new group and incorporation meaning taking on the new patterns of interaction with the new group, would have more relevance for nontraditional students attending a community college.

An implication that emerged from the discussion is the impact that a faculty member has in implementing or fostering the peer group relationships. Several students spoke of the faculty member introducing the means by which conversation would initially begin between peers. Faculty pedagogical practices can enhance the integration of nontraditional students. This would appear to be an endorsement of collaborative learning, group work on class assignments, and the development of study partners.

Research has shown that the full time, residential student builds a base of support from the club and activities, the dorm life, and the constant interaction with others (Chickering and Reisser, 1993). However, from the data in the pilot study, the community college student appears to build a metaphorical support net, weaving it one strand at a time from one class, one student, or one family member at a time. They can then fall back on this net when the occasion calls for support.

Using the data from this pilot study, the Likert-type questions (Appendix G) were developed specifically for students that attend community colleges, such as older, and/or commuting students that attend both full and part-time. These new survey items differ from the peer-group and faculty/staff items by having the classroom as the focus of the interaction. These items more closely reflect the nontraditional student's particular social experience and integration as described by Tinto (1993). This is a departure from the type of questions asked in the Institutional Integration Scale which basically asked for a self-assessment of social and educational outcomes.

The next step was to pretest the new questionnaire with a small convenience group of nontraditional students. This particular part of the research was accomplished in the eight-week spring-summer session of 1996. Several classes of approximately 20 students were chosen to answer the new questions. A strategy proposed by William Belson (1968 as reported by Borg and Gall, 1989) is to provide space on the questionnaire for the respondents to repeat their understanding of the meaning of the question in their own words. Questions were revised based on the responses of these students.

Analyses

Data Preparation

The data was calculated using SPSS version 7.5 for Windows. The first step in the data preparation was a data reduction technique. After the data had been collected, a principal axis factor analysis was performed on the 20 newly-developed items to confirm the existence of new scales reflecting the social integration concept in the model (Borg and Gall, 1989). The second step was to perform bivariate analysis to determine any significant differences between the whole group and any divisions of the group.

Multivariate relationships

Various statistical methods were considered for the analysis of this study. In 1980 Pascarella and Terenzini used multivariate analysis of covariance and discriminant analysis to determine the predictive validity of the Institutional Integration Scale. In more recent times advanced technology and software has allowed for newer statistical techniques as opposed to the more traditional techniques such as linear regression. More recently logistic analysis has been used by researchers (Voorhees, 1987; Stage, 1989) because of the dichotomous nature of retention as a dependent variable. This particular study is a small sample study and would violate basic assumptions of logistic analysis. With 30 variables being considered, at least 300 cases with no missing values would be needed for the analysis. Dey and Astin (1993) completed a comparative analysis of logit, probit, and linear regression and the implications of using the different techniques. Their results show, that for variables that are moderately distributed, there is little difference in the results of the three statistical methods and that considering other criteria such as cost and software availability would be practical to determine which method to use in studying student retention. They continue and report that regression analysis is more widely used and is a better understood method and that the software is more prevalent and has more options for running linear regression. Based on these considerations, I chose to use regression analysis to determine the predictive validity of the scales on the statistical software SPSS version 7.5. Multiple regression allowed full advantage of the continuous variables and allowed dummy coding for the categorical variables. Mean replacement was used for missing values. As a confirmation, a logistic regression was run on the data and the results appeared to be no different.

At the 5 percent confidence level, a group of approximately 292 students was needed for the study. This number was taken from a table which was determined by a formula published in an article titled Small Sample Techniques, in the NEA Research Bulletin (1960).

The Tinto model was tested as it had been used in previous studies using the Institutional Integration Scale by Pascarella and Terenzini (1980). Then the Tinto model was tested focusing on including the new measures to understand how they perform relative to other measures that had been used on traditional college students. An additional piece in the second analysis was the external commitments which is currently not part of previous models that had been tested, but is a new addition to the 1993 Tinto version that was intended to capture the experiences of some of the nontraditional students.

Significant Contribution for Research and Practice

The purpose of this study was first to determine if social integration impacts a community college student's decision to re-enroll the following semester. In addition, the study examined the difference between the effects of a measure that is specifically tailored for nontraditional students and the measure that had been used in many previous studies without regard to type of institution and differences in traditional versus non traditional status. The mixed results for finding a positive effect of social integration in commuter and two-year schools may have been a result of inappropriate measures for nontraditional students and it was hoped that this study took a step in the direction to define and develop a more precise measure. In addition, one of the major institutional goals for Schoolcraft College currently is to engage in a proactive enrollment management program. This study provided Schoolcraft College a benchmark on which to evaluate further efforts in their enrollment management efforts.

Limitations of the Study

This study was limited to a single institution with a relatively small student population. The institution in the study is a suburban community college and the student body differs from either urban or rural community colleges academically and financially. Therefore the newly developed survey instrument will have to be used in several different studies to ascertain generalizability across community college contexts.

CHAPTER IV

RESULTS

This chapter reports the results of the various quantitative analysis performed on the data collected through the College Experiences Survey. The analyses consist of 1) a descriptive analysis of the survey sample versus the total population on selected characteristics, 2) a descriptive analysis of the respondents who returned the following semester versus those respondents that did not return, or the retention results, 3) a factor analysis of the survey to determine representative factors, 4) a comparative analysis between the factors of the Institutional Integration Scale and the factors obtained from the College Experiences Survey and 5) a comparison of two multiple regression analyses. One regression analysis contains the Institutional Integration Survey factors from the Pascarella and Terenzini 1980 study and the second analysis contains the factors from this study's College Experience Survey. The comparison is to help establish which factors may better explain the influence on persistence from the fall semester to the winter semester.

Descriptive Analysis - Survey Sample

First, it is necessary to determine whether the survey respondents are representative of the original population for the study. The population consists of all those students that took the placement test from May 1996 through September 1996.

This population consists of approximately 56 percent of the new students attending Schoolcraft College Fall 1996. It was reported that 1766 students took the Asset and CPT placement tests. (Asset is a paper and pencil test while the CPT is the same test using a computer generated exam.) All 1766 students were sent questionnaires. Of those 1766 students, 503 students elected not to attend Schoolcraft College in the Fall, 1996, therefore the actual population used for this study consists of 1263 students. From the 1766 original students surveyed, 330 surveys were returned. Of those 330 returned, 11 were from ineligible students that were not attending college and therefore were discarded. The final number of usable student surveys was 319, which exceeds the 290 cases which according to the Small Sample Techniques article in the NEA Research Bulletin (1960) is sufficient for analyzes. Table 4 shows some descriptive statistics of the 319 survey respondents and the 1263 total student population.

Table 4 - Description of Population

Variables	Population				Total	
	Respondents		NonRespondents			
	N	%	N	%	N	
Age						
under 20	137	42.9	507	53.7	644	50.9
20-24	44	13.8	194	20.6	238	18.8
25-29	37	11.6	83	8.8	120	9.5
30-34	28	8.8	69	7.3	97	7.6
35 & over	73	22.9	91	9.6	164	12.9
Gender						
Female	223	69.9	469	49.7	692	54.7
Male	96	30.1	475	50.3	571	45.2
Persistence						
Persister	257	80.6	589	62.4	846	66.9
Non-Persister	62	19.4	355	37.6	417	33.0

Next is a comparison of the survey respondents and the total population. Table 5 shows the means and standard deviations of these three selected variables. A one sample t-test was conducted to determine if there were any significant differences between the sample and the total population. The tests show that there are significant differences ($p < .001$) between the students in the area of age, gender and persistence to the winter semester. Of the respondents, 69.6 percent were females and of

Table 5 - Means and Standard Deviations of Unweighted Variables by Respondent and Total Population

Variable	Mean/%		Standard Deviation		Sig (2-tailed)
	Resp n=319	Total n=944	Resp	Total	
Age	2.55	1.80	1.63	1.44	.000*
Under 20 (1)	42.9%	50.9%			
20-24 (2)	13.8%	18.8%			
25-29 (3)	11.6%	9.5%			
30-34 (4)	8.8%	7.6%			
35 & over (5)	22.9%	12.9%			
Female	69.9%	54.7%	.46	.50	.000*
Return Winter Sem.	80.6%	66.9%	.40	.47	.000*

* Unweighted cases statistically significant at (p=.001)

the of the total population 54.7% percent were females. Seventy percent of the total population were under 24 years of age, while approximately 44 percent of the respondents were over 24 years of age. Of the respondents 80.6 percent returned the following semester as opposed to only 66.9 percent of the non respondents. In order to compensate for these differences, students survey responses have been weighted for subsequent analysis. To weight the responses, the sample was divided into 20 separate groups. The groups consisted of persistent and non persistent females in each of the five age groups and the persistent and non persistent males in each of the five age groups. An example would be a persistent female under age 20 and a non persistent female under age 20. A percentage was calculated for the population group and for the sample group. A weight was calculated by dividing the sample percentage by the population percentage. For example, for persistent women under 20, the percentage of the population was .1971 and the percentage of the sample was .2413. The weight for persistent women under 20 was calculated to be .8168. The weight was then applied to each case where the persistent female was under 20. The weights were then applied in further analyses. The frequencies for the weighted cases are shown in Table 6.

Table 6 - Means and Standard Deviations of Variables by Weighted Respondent and Unweighted Total Population

Variable	Mean/%		Standard Deviation		Sig(2-tailed)
	Resp	Total	Resp	Total	
Age	2.10	2.13	1.43	1.44	.718/ns
Under 20 (1)	51.7%	50.9%			
20-24 (2)	19.1%	18.8%			
25-29 (3)	9.6%	9.5%			
30-34 (4)	6.4%	7.6%			
35 & over (5)	13.2%	12.9%			
Female	54.2%	54.7%	.50	.50	.764/ns
Return Winter Sem.	67.9%	66.9%	.47	.47	.726/ns

ns=not significant

The under twenty years of age are 70% for the respondents and 69% of the total population. Females are 54.2% of the respondents and females are 54.7% of the total population. For respondents nearly 68% returned the following semester as opposed to nearly 67% for the total population. Again a one sample t-test was conducted to detect any significant differences between the respondents and the total population. There are no significant differences between age, gender and returning the following between the sample respondents and the total population. Due to the weights, the respondents are now representative of the total population. The weights were applied for all subsequent analyses.

Factor Analysis

The data reduction began with a factor analysis using the weighted responses of 85 survey items. Items 1-7 on the survey were background items. The remaining 85 items were broken into two groups. One group reproduced the Institutional Integration Scale (IIS) used in the 1980 Pascarella and Terenzini study. The five factors developed in the 1980 study (Peer-Group Interactions, Interactions with Faculty, Faculty Concern for Student Development and Teaching, Academic and Intellectual Development, and Institutional and Goal Commitments) were intended to be representative of the theoretical constructs of the 1975 Tinto Model of student departure from college.

The second group contained the items developed for the College Experience Survey. These items were developed at Schoolcraft College after a series of focus groups and from the prevailing research on retention. These items were designed specifically for community college students and were developed to test their relevance compared to the Pascarella and Terenzini 1980 study items. Specifically, the current study was intended to examine the social and academic integration items for persistence of community college students. Some items were also developed to test the external commitments component of the 1993 Tinto Model.

Principle axis factoring was performed with varimax rotation on all items. Mean replacements were also used for missing responses on some items. Appendix F contains the survey. Item numbers 16, 22, 23, and 39 displayed as negative responses. These items were then recoded for logical interpretation. The factor analysis was repeated with the recoded items.

A principle axis factoring was also the extraction method performed with varimax rotation with mean replacement on the College Experience Survey weighted item responses. Item numbers 74, 76, 77, and 79 displayed as negative responses and were recoded for logical interpretation. The factor analysis was repeated with the recoded items. See tables 8 and 17 for the results of these factor analyses. The particular item numbers from the questionnaire are displayed, as well as the factor loading and the scale alpha.

Table 7 shows the factor analysis performed on the group of items reproduced from the Institutional Integration Scale (items 8 through 41). Nine factors with initial eigenvalues ranging from 1.112 to 7.549 emerged. This 9 factor solution accounted for 48.427 percent of the variance in the rotated correlation matrix. Of the original 34 Institutional Integration Scale (IIS) items in the 1980 study, only 30 items loaded on that factor analysis. Four items failed to load .35 or above and were not included in the computation of the scale scores. In the current study's analysis, three items did not load .35 or above and were not included in the computation of the scale scores.

Factors and Factor Comparison: Replication of IIS

To compare the factor analysis results on the Institutional Integration Scale (IIS) from the current study conducted at Schoolcraft College to the factor analysis results obtained in the Pascarella and Terenzini 1980 study, each factor is defined and the results are compared in separate Tables 8 - 14. Any item from the current study that was recoded prior to the factor analysis is displayed with a "r". Each factor displays how the items on both studies loaded and the respective scale alpha. Many of the items loaded the same on factors in both studies, however the factor analysis could not be exactly replicated. For example, there were items that loaded in factors in one study and not the other. Some items loaded on completely different factors, or were not components of the expected factors. When these situations occurred, they are designated with an asterisk to simply indicate that there was a difference in loadings between the two studies. These differences are noted and discussed in the table explanations. Subsequent analysis uses the Scales from the IIS, but uses the modified version from this study that includes only the relevant items.

Table 7 - Factor Analysis: Replication of Institutional Integration Scale (IIS) (Pascarella & Terenzini, 1980)

	Item Factor Loadings, Alpha Reliabilities		
Item No.	**Scale/Item**	**Loading**	**Scale Alpha**
	PEER GROUP INTERACTIONS (IIS1)*		.84
19	I have developed close personal relationships with other students	.83	
20	The student friendships I have developed this semester have been personally satisfying	.82	
21	My interpersonal relationships with other students have had a positive influence on my personal growth, values and attitudes	.73	
18	My interpersonal relationships with other students have had a positive influence on my intellectual growth and interest in ideas	.59	
22r	It has been difficult for me to meet and make friends with other students	.44	
	FACULTY INTERACTIONS (IIS2) Replicated		.84
32	My non-classroom interactions with faculty this semester have had a positive influence on my personal growth, values and attitudes	.83	
34	My non-classroom interactions with faculty this semester have had a positive influence on my career goals and aspirations	.76	
31	This semester, I have developed a close, personal relationship with at least one faculty member	.64	
29	My non-classroom interactions with Schoolcraft faculty members have had a positive influence on my intellectual growth and interest in ideas	.64	
28	I am satisfied with my opportunities this semester to meet and interact informally with faculty members	.44	
	FACULTY CONCERN FOR STUDENT DEVELOPMENT AND TEACHING (IIS3)*		.71
35	Few of the faculty members I have had contact with this semester are genuinely interested in students	.81	
33	Few of the faculty members I had contact with this semester are genuinely outstanding or superior teachers	.67	
30	Few of the Schoolcraft faculty members I have had contact with this year are willing to spend time outside of class to discuss issues of interest and importance to students	.60	
8	Few of my courses this year have been intellectually stimulating	.40	
	ACADEMIC & INTELLECTUAL DEVELOP. (IIS4) *		.67
11	I am satisfied with the extent of my intellectual development this semester	.59	
9	I am satisfied with my academic experience at Schoolcraft College this semester	.56	
17	I have performed academically as well as I anticipated I would	.51	
27	I am happy with my living arrangement this semester	.44	

*=Indicates could not be exactly replicated

	Item Factor Loadings, Alpha Reliabilities		
Item No.	**Scale/Item**	**Loading**	**Scale Alpha**
	ACADEMIC IMPACT (IIS5)**		.66
15	My academic experience this year has had a positive influence on my intellectual growth and interest in ideas	.58	
13	My interest in ideas and intellectual matters has increased this semester	.58	
12	In addition to required reading assignments, I read many of the recommended books in my courses	.39	
	GOALS (IIS6)*		.59
38	It is important to me to graduate from college	.80	
16r	Getting good grades is not important to me	.54	
39r	It is not important to me to graduate from Schoolcraft	.37	
	PERCEPTIONS OF FACULTY (IIS7)**		.67
36	Most faculty members I have had contact with this semester are genuinely interested in teaching	.72	
37	Most of the Schoolcraft faculty members I have had contact with are interested in helping students grow in more than just academic areas	.58	
	COMMITMENTS (IIS8)**		.51
41	It is likely that I will register at Schoolcraft in the winter, 1997 semester	.55	
40	I am confident that I made the right decision in choosing to attend Schoolcraft	.48	
	EXTRA-CURRICULAR ACTIVITIES (IIS9)**		.45
26	I am satisfied with the opportunities to participate in organized extra-curricular activities at Schoolcraft	.44	
10	I am more likely to attend a cultural event (for example, a concert, lecture or art show) now than I was a year ago	.43	

Note: Items were scored 4 = agree strongly or Often to 1 = disagree strongly or never. Items with negative loadings were recoded as 1= agree strongly or often to 4 = disagree strongly or never before factor analysis. The recoded items appear in the Item No column with a "r" such as 22r. In the column headed loading, only items with loadings of .35 or above are displayed and included in the computation of the scale alpha.

*=Could not be exactly replicated.

**=New factor emerged from IIS items, a departure from the original 1980 study.

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Scale 1 - Peer Group Interactions (IIS)

The underlying construct of Scale 1, Peer Group Interactions, portrays the social integration among students and illustrates a climate where satisfying peer relationships are formed. The items in the Peer Group Interactions loaded differently for the current study and the 1980 study. As shown in Table 8, items 19, 20, 21, 18 and 22r loaded on this scale for both the current study and the 1980 study. Two additional items, 24 and 25 loaded on this scale in the 1980 study. In this study, however, the factor loading for item 24 was below .35 and item 25 loaded as a single item factor and was not used in additional analysis. The loading for the first three items, 19, 20, 21, are consistent with the 1980 study. Item 22r was recoded prior to the factor analysis and reflects a positive rather than a negative response. Item 18 and 22r have a lower loading indicating that these interpersonal interactions are not as strongly correlated on this factor in the current study. These differences in factors may be an example of the differences between a residential student from the 1980 study and a commuting community college student in this study. It may be that the lack of time spent together for nontraditional students on a consistent basis impedes opportunities for creating these kinds of interpersonal relationships, or that community college students were not seeking these types of relationships. The fact that item 24 which states *few of the Schoolcraft students I know would be willing to listen to me and help me if I had a personal problem* loaded under .35 is not surprising. Few community college students seek these types of close personal relationships. This particular item is one of the items that drew me to this particular research because of its lack of relevance for students in commuting schools.

Table 8 - Peer Group Interactions (IIS)

Item No	Scale/Item	Loadings		Scale Alpha	
		This study	1980 study	This study	1980 study
	Scale 1 Peer Group Interactions (IIS)			.84	.84
19	I have developed close personal relationships with other students	.83	.82		
20	The student friendships I have developed this semester have been personally satisfying	.82	.82		
21	My interpersonal relationships with other students have had a positive influence on my personal growth, values and attitudes	.73	.76		
18	My interpersonal relationships with other students have had a positive influence on my intellectual growth and interest in ideas	.59	.72		
22r	It has been difficult for me to meet and make friends with other students	.44	-.71		
24*	Few of the students I know would be willing to listen to me and help me if I had a personal problem	loaded <.35	-.58	xx	
25*	Most students at this university have values and attitudes different from my own	not used	-.37	xx	

Item response scale: 5=agree strongly, 4=agree somewhat, 3=not sure, 2=disagree somewhat, 1=disagree strongly
r=a recoded item
*=items were different than the Pascarella and Terenzini 1980 study
xx=Items excluded from Alpha reliability tests

Scale 2 - Faculty Interactions (IIS)

The underlying construct for Scale 2, Faculty Interactions, can be defined as familiarity. Familiarity reflects an atmosphere between faculty and student where easy conversation outside of class is possible. This type of conversation is where the faculty reveals his/her values and beliefs in an effort to advise and guide. Table 9 shows that the Faculty Interactions factor scale alpha is consistent for both studies and that the same five items loaded on this factor. While items 32, 34 and 28 have similar loadings, items 31 and 29 have a lower loading than the 1980 study. It is curious that the items 31 and 29, stating that the student has developed a close, personal relationship with at least one faculty member and that the non-classroom interactions with faculty have had a positive influence on their intellectual growth and interest in ideas, have a weaker loading. One explanation may be that the topics discussed outside of class relate more to attitudes and career goals rather than intellectual matters.

Table 9 - Faculty Interactions

Item No	Scale/Item	Loadings		Scale Alpha	
		This study	1980 study	This study	1980 study
	Scale 2 Faculty Interactions			.84	.83
32	My non-classroom interactions with faculty this semester have had a positive influence on my personal growth, values and attitudes	.83	.86		
34	My non-classroom interactions with faculty this semester have had a positive influence on my career goals and aspirations	.76	.73		
31	This semester, I have developed a close, personal relationship with at least one faculty member	.64	.72		
29	My non-classroom interactions with Schoolcraft faculty members have had a positive influence on my intellectual growth and interest in ideas	.64	.83		
28	I am satisfied with my opportunities this semester to meet and interact informally with faculty members	.44	.47		

Item response scale: 5=agree strongly, 4=agree somewhat, 3=not sure, 2=disagree somewhat, 1=disagree strongly
r=a recoded item
*=items were different than the Pascarella and Terenzini 1980 study

Scale 3 - Faculty Concern for Student Development and Teaching (IIS)

Scale 3, Faculty Concern for Student Development and Teaching, is defined as the student's perception of the competence and the effectiveness of the faculty. In the 1980 study five items, items 35, 33, 30, 37, and 36 loaded in this factor. As shown in Table 10, the 3 variables that began with "few of the faculty members..." correlated

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negatively with the factor and the 2 variables that began with "most of the faculty members..." correlated positively with the factor. In the 1980 study, item 8 loaded on Scale 4, Academic and Intellectual Development. In the current study, all the variables 35, 33, 30 and 8 that began with "few of the faculty members..." correlate positively with the factor. Upon checking the means for items 35, 33, 30, it was found that the means are all at the mid point between 1 and 4. Fox (1984) found that his sample of urban community college students were confused by the negatively worded items. They did not understand that it was necessary to answer negatively to a negative item to obtain a positive response. It is also possible that the number of part-time students were ambivalent about the part-time faculty they may have encountered in the evening classes. It is also possible that the positive responses are a result of the quantitative rotation. The variables 37 and 36 that begin with, "most of the..." loaded not on this factor but on factor 7, Perceptions of Faculty.

Table 10 - Faculty Concern for Student Development and Teaching

Item No	Scale/Item	Loadings		Scale Alpha	
		This study	1980 study	This study	1980 study
	Scale 3 - Faculty Concern for Student Development and Teaching			.71	.82
35	Few of the faculty members I have had contact with this semester are genuinely interested in students	.81	-.77		
33	Few of the faculty members I had contact with this semester are genuinely outstanding or superior teachers	.67	-.72		
30	Few of the Schoolcraft faculty members I have had contact with this year are willing to spend time outside of class to discuss issues of interest and importance to students	.60	-.58		
8*	Few of my courses this year have been intellectually stimulating	.40	Factor 4	xx	
37*	Most of the Schoolcraft faculty members I have had contact with are interested in helping students grow I more than just academic areas (Scale 7)	Scale 7	.56	xx	
36*	Most faculty members I have had contact with this semester are genuinely interested in teaching (Scale 7)	Scale 7	.54	xx	

Item response scale: 5=agree strongly,4=agree somewhat, 3=not sure, 2=disagree somewhat, 1=disagree strongly
r=a recoded item
*=items were different than the Pascarella and Terenzini 1980 study
xx=items were excluded from alpha reliability tests

Scale 4 - Academic & Intellectual Development (IIS)

Scale 4, Academic & Intellectual Development, can be defined as a sense of satisfaction about the academic experience. The students are satisfied with their experiences, their progress in the academic field, their living arrangements and their decision of choosing Schoolcraft College. The continuity between the two studies seems to be less consistent beginning at this point. In the 1980 study, there were additional items that loaded on this factor. In Table 11, there are only three items, 11, 9, 17, that loaded in common between the two studies. These items had mid to high loading scores and were consistent with each other. An additional item, 27, loaded on the current study but loaded under .35 in the 1980 study. Four other items, 8, 10, 13, and 15, loaded in this factor in the 1980 study but not in this study.

Table 11 - Academic & Intellectual Development

Item No	Scale/Item	Loadings		Scale Alpha	
		This study	1980 study	This study	1980 study
	Scale 4 Academic & Intellectual Development			.67	.74
11	I am satisfied with the extent of my intellectual development this semester	.59	.64		
9	I am satisfied with my academic experience at Schoolcraft College this semester	.56	.68		
17	I have performed academically as well as I anticipated I would	.51	.41		
27*	I am happy with my living arrangement this semester	.44	<.35		

Item response scale: 5=agree strongly, 4=agree somewhat, 3= not sure, 2=disagree somewhat, 1=disagree strongly
r=a recoded item
*=items were different than the Pascarella and Terenzini 1980 study

Scale 5 - Academic Impact (IIS)

This factor can be defined as having created an environment where the academic experiences have impacted the student's absorption of new material. This factor is essentially a split from the Academic and Intellectual Development factor in the 1980 study. Instead of one factor, the current study created two separate factors. Table 12 shows that three items, 15, 13, and 12, loaded in this factor with a relatively high scale alpha at .66. Two of those items in the 1980 study, 15 and 13, loaded with the previous factor, Academic & Intellectual Development. Item 12 loaded below .35 and was unreported in the 1980 study. When a correlation analysis was performed, scale 4, Academic & Intellectual Development, and scale 5, Academic Impact, were correlated (.46). It was decided to use the factor with the most items, scale 4 rather than scale 5 in any further analysis.

Table 12 - Academic Impact

Item No	Scale/Item	Loadings		Scale Alpha	
		This study	1980 study	This study	1980 study
	Scale 5 - Academic Impact			.66	
15	**My academic experience this year has had a positive influence on my intellectual growth and interest in ideas	.58	.67 Scale 4		
13	**My interest in ideas and intellectual matters has increased this semester	.58	.55 Scale 4		
12	**In addition to required reading assignments, I read many of the recommended books in my courses	.39	<.35		

Item response scale: 5=agree strongly, 4=agree somewhat, 3=not suare, 2=disagree somewhat, 1=disagree strongly
r=a recoded item
*=items were different than the Pascarella and Terenzini 1980 study

Scale 6 - Goals (IIS)

The underlying construct of this factor is the student's academic goal and institutional commitment to Schoolcraft College. This scale equates to the 1980 study scale entitled Institutional and Goal Commitments. While this factor does contain 3 of the 5 items in that scale, the scale alpha is not particularly strong at only .59. In an attempt to strengthen the alpha scale of this goal, two different measures were tried. Instead of using eigenvalues of greater than 1, the analysis was programmed to force five factors. This analysis produced five factors but still not a separate factor of Institutional and Goal Commitments. The items in the Institutional and Goal Commitments factor loaded together with the factor, Academic and Intellectual Development. Another analysis was tried. Pascarella and Terenzini (1980) used a principal components factor analysis instead of the principal axis factor analysis. So a principal components factor analysis with eigenvalues greater than 1 and also principal components factor analysis forcing five factors was run to see if it produced a stronger alpha scale for the Institutional and Goal Commitment factor. Using either of these two methods did not produce a stronger alpha scale for the separate factor of Institutional and Goal Commitment.

Since principal axis factoring is a more stringent method, that method was the preferred method, but does result in not having a distinct strong factor for institutional and goal commitment. Notice in Table 13 also the strong loading for importance to graduate from college, but the weaker loading for importance to graduate from Schoolcraft. Many students never graduate from Schoolcraft College, but simply transfer to a four-year institution.

Table 13 - Goals

Item No	Scale/Item	Loadings		Scale Alpha	
		This study	1980 study	This study	1980 study
	Institutional Integration Scale 6 - Goals			.59	.71
38	It is important to me to graduate from collage	.80	.69		
16r	Getting good grades is not important to me	.54	-.45		
39r	It is not important to me to graduate from Schoolcraft	.37	-.59		
41	*It is likely that I will register at Schoolcraft in the winter, 1997 semester	Scale 8	.62		
40	*I am confident that I made the right decision in choosing to attend Schoolcraft	Scale 8	.67		

Item response scale: 5=agree strongly, 4=agree somewhat, 3= not sure, 2=disagree somewhat, 1=disagree strongly
r=a recoded item
*=items were different than the Pascarella and Terenzini 1980 study

Scale 7 - Perceptions of Faculty (IIS)

While there are only two items in this factor, as shown in Table 14, the scale alpha is relatively high at .67. The underlying construct in this factor is the student's perception that the faculty members are interested in teaching and interested in helping students to learn. As mentioned earlier, these two items were included in the 1980 study Scale 3 - Faculty Concern for Student Development and Teaching. Since this was not a separate factor in the 1980, there is no Scale Alpha for this factor.

Table 14 - Perceptions of Faculty

Item No	Scale/Item	Loadings		Scale Alpha	
		This study	1980 study	This study	1980 study
	Institutional Integration Scale 7 - Perceptions of Faculty			.67	
36	Most faculty members I have had contact with this semester are genuinely interested in teaching	.72	Scale 3		
37	Most of the Schoolcraft faculty members I have had contact with are interested in helping students grow in more than just academic areas	.58	Scale 3		

Item response scale: 5=agree strongly, 4=agree somewhat, 3=not sure, 2=disagree somewhat, 1=disagree strongly
r=a recoded item
*=items were different than the Pascarella and Terenzini 1980 study

Scale 8 Commitments, 9 Extra-Curricular Activities (IIS)

As shown in Table 15, Scale 8, Commitments and Scale 9, Extra-Curricular Activities had two items each. The scale alphas were low and these scales were not used in any further analyses. Again this was not a factor in the 1980 study, so there is no Scale Alpha from that study.

Table 15 - Commitments, Extra-Curricular Activities, Relationships

Item No	Scale/Item	Loadings		Scale Alpha	
		This study	1980 study	This study	1980 study
	Institutional Integration Scale 8 - Commitments			.51	
41	It is likely that I will register at Schoolcraft in the winter, 1997 semester	.55	Scale 5		
40	I am confident that I made the right decision in choosing to attend Schoolcraft	.48	Scale 5		
	Institutional Integration Scale 9 - Extra-Curricular Activities			.45	
26	I am satisfied with the opportunities to participate in organized extra-curricular activities at Schoolcraft	.44			
10	I am more likely to attend a cultural event (for example, a concert, lecture or art show) now than I was a year ago	.43			

Item response scale: 5=agree strongly, 4=agree somewhat, 3=not sure, 2=disagree somewhat, 1=disagree strongly
r=a recoded item*=items were different than the Pascarella and Terenzini 1980 study

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The Factor Analysis Table 7 contain all of the factors that resulted from the IIS factor analysis. However only the factor loadings with .35 or above and only factors with a reliability scale equal to or larger than .65 are used in further analyses.

In Table 7, of the nine scales identified, three factors were weak and had only two items in the factor or low scale alphas. Of the remaining six factors, two of the factors were highly correlated and thus only one factor was used. This has resulted in a usable list of five modified factors with valid loadings and high reliability for this population to be used in further analysis. It should be noted only one of the original IIS factors could be exactly replicated. The difficulty in replicating results and the required use of modified factors indicates that the IIS is less useful for this population of students. These modified factors used in subsequent analyses include Peer Group Interactions, Faculty Interactions, Faculty Concern for Student Development and Teaching, Academic and Intellectual Development, Perceptions of Faculty.

An alternate way to compare with the Pascarella & Terenzini 1980 study would to have used their items and constructed reliability scales from their factors for this sample. Table 16 depicts the scale alphas for the 1980 study and what the scale alphas would have been for this study.

Table 16 - Comparison of Scale Alphas from Same Survey Items

Factors	Scale Alpha 1980 Study	Scale Alpha Current Study
Peer Group Interactions	.84	.75
Interactions w/Faculty	.83	.84
Faculty Concern f/ Student	.82	.58
Academic & Intellect Dev.	.74	.73
Institutional & GoalComm	.71	.60

The scale alpha are fairly similar. However, there is a difference in the Peer Group interactions. Considering the differences in the populations, four-year residential students (scale alpha=.84) versus two-year commuter students (scale alpha=.75), the difference in the scale alpha is not unexpected. The factor, Faculty Concern for Students has a lower scale alpha. Fox (1984) found that with an urban community college sample that he also experienced a lower scale alpha with this particular scale. Fox found that the students were confused by the negatively worded questions. The students were not picking up the meaning of the negative wording which required them to respond negatively to indicate a positive attitude. The reliability scales are also different for the institutional and goal commitment factor for the current population (scale alpha=.60) compared to the 1980 study (scale alpha=.71). This difference is not unexpected since the community college student could be taking classes for many different reasons, such as career change, transfer, 2-year degree, or just special interest. In conducting the factor analysis for the current population, the institutional and goal commitment could not be replicated. This obviously indicates that a scale of .60 is simply too low to be used reliably with this population. The scales appear sufficiently high enough to use in this study. However, by conducting my own factor analysis and identifying the differences in constructs, I took a more conservative approach and used the modified IIS for further analysis.

Factors: College Experience Survey

Table 17 shows the factor analysis performed on the group of items that were developed in the College Experience Survey for community college students. The results showed a solution of 13 factors with initial eigenvalues ranging from 1.087 to 10.249 This 13 factor solution accounted for 63.787 percent of the variance in the rotated correlation matrix. Six items failed to load .35 or above and were not included in the computation of the scale scores.

The first seven factors contain two or more items and have relatively good alpha levels at .62 or above. The next three factors contain an average of two items with low alpha levels. Factor 11 contains two items with a Alpha Scale of .70. Factors 12 and 13 do not contain any correlating items over .35 and therefore are not shown in Table 17.

In examining factors 1-7 and 11, it is well to remember that this new instrument was developed to accommodate the differences in full-time residential students and community college students. In particular to examine the academic and social integration measures and to look at a extension of the model for further explanation of the dropout decisions.

Table 17 - Factor Analysis: College Experience Scale (CES)

	Item Factor Loadings, Alpha Reliabilities		
Item No.	Scale/Item	Loading	Scale Alpha
	SOCIAL COHESION (CES1)		.93
92	I see myself as a part of the Schoolcraft College community	.84	
88	I feel a sense of belonging to the Schoolcraft College community	.83	
91	I am enthusiastic about Schoolcraft College	.79	
89	I feel a sense of responsibility to Schoolcraft College	.78	
90	If asked, I would recommend Schoolcraft College to others	.78	
85	I feel that I am a member of the Schoolcraft College community	.75	
84	I am glad I attended Schoolcraft College	.74	
87	Schoolcraft College is one of the best community colleges in the area	.74	
86	I will definitely complete a degree at Schoolcraft College community	.61	
57	My instructors provide opportunities to interact with other students in the classroom	.46	
	GOOD STUDY HABITS (CES2)		.83
75	In general I exercise good study habits	.67	
74r	I am lazy about keeping up with course assignments	.66	
77r	During most of the semester, I do very little studying on weekends	.66	
80	Generally I put a good deal of effort into being well prepared for examinations	.64	
79r	Most of the time, I give a higher priority to other activities than to studying	.58	
78	I generally keep up with my reading assignments for class	.55	
76r	I tend to study only when I need to	.53	
81	On weekends I do more studying than recreation	.49	
	PEER ACADEMIC COOPERATION (CES3)		.80
45	Work with a study buddy	.75	
44	Study in groups	.70	
48	Attend a pre-arranged study group session	.64	
62	Meet other students for coffee breaks or lunch/dinner	.54	
43	Call another classmate about homework	.48	
47	Meet and talk to people in between classes	.38	
	SEEKING PEER CLASSROOM ASSISTANCE (CES4)		.74
49	If you don't understand what is going on in class, how often do you turn and ask someone near you to explain	.61	
64	Receive help from others in your classes	.58	
54	Friends at school make my college experience enjoyable and less stressful	.46	
50	I enjoy participating in group projects in some classes	.41	
63	Help others in your classes	.36	
	CHILDCARE DIFFICULTIES (CES5)		.77
71	Problems with children	.81	
69	Difficulty with child care arrangements when I'm in classes and for studying	.77	

	Item Factor Loadings, Alpha Reliabilities		
Item No.	**Scale/Item**	**Loading**	**Scale Alpha**
	SEEKING FACULTY ASSISTANCE (CES6)		.67
61	Ask an instructor for help	.66	
59	Talk to an instructor outside of the classroom	.58	
60	Has an instructor advised you about what class or classes to take	.54	
	TIME CONFLICTS (CES7)		.62
66	Conflicting demands on my academic time because of job responsibilities	.72	
65	Conflicting demands on my academic time because of home and family responsibilities	.59	
	INTERACTION NEEDS (CES8)		.57
58	I wish I had more interactions with instructors	.60	
53	I wish I had more interaction with other students	.58	
	SUPERVISED LEARNING ASSISTANCE (CES9)		.56
82	I am using or intend to use student services such as peer tutoring, career counseling, or the learning assistance center	.52	
83	I am taking or intend to take a study skills course	.47	
	PROBLEM RELATIONSHIPS (CES10)		.55
72	Problems with parents	.66	
70	Problems with spouse or mate	.43	
	PEER COURSE SELECTION (CES11)		.70
51	I plan to enroll in a future class with people I know	.66	
46	Met someone in class that you decided to take another class with	.49	

Note: Items were scored 4 = agree strongly or Often to 1 = disagree strongly or never. Items with negative loadings were recoded as 1= agree strongly or often to 4 = disagree strongly or never before factor analysis. The recoded items appear in the Item No column with a "r" such as 22r. In the column headed loading, only items with loadings of .35 or above are displayed and included in the computation of the scale alpha.

The underlying construct for Scale 1, Social Cohesion, is the student's sense of belonging to the institution and the students sense of morale. It is a replication of Bollen & Hoyles' (1990) scale used on several different populations. Their definition of perceived cohesion is:" Perceived cohesion encompasses an individual's sense of belonging to a particular group and his or her feelings of morale associated with membership in the group." Having both dimensions, sense of belonging and feelings of morale are important because it makes social cohesion relevant for small and large groups. Social Cohesion was used by Hurtado and Carter (1997) with Latino college students. This is the first application of the Social Cohesion scale with a community college population. The second scale called Good Study Habits, is an extension of the Tinto 1993 model. Since many of these students have been out of school for a number of years, their lack of good study habits or lack of willingness to exercise good study habits may be influential in their decision to return the following semester or not. The underlying construct for the third scale, Peer Academic Cooperation, is how well the students work together on academic matters in the classroom or socialize with each other. In many situations, the classroom is the only place the students will socialize. The fourth scale, Peer Classroom Assistance, relates to help that is given or received in the classroom. This factor is in response to the focus group discussions held at Schoolcraft College. In those discussions, students related a feeling of social interaction when they were involved in either receiving or giving help from or to other students. Scale five, Child Care Difficulties and scale seven, Time Conflicts is in response to Tinto's reference to outside commitments for commuting students. This measure of a construct in the 1993 institutional departure model was a new addition from the 1975 Tinto model.

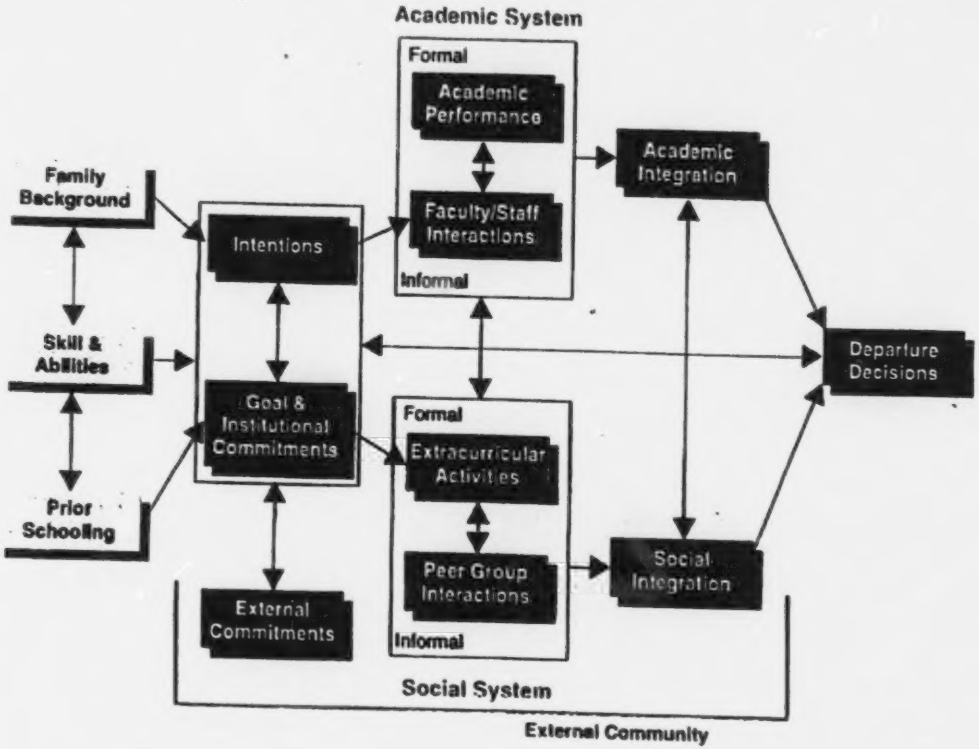
The sixth scale Faculty Assistance, is a counterpart to the IIS Faculty Interactions factor. Its underlying construct is having an academic relationship with faculty. In a community college, the interactions with faculty are generally limited and are often referenced in and around the classroom and/or academic affairs.

The seventh scale, Time Conflicts, has as its underlying construct the friction created when competing responsibilities are vying for a student's allocated time. Students in a commuting community college are not only students, but are often wage-earners, parents, and active in the community. This scale is a response to the added construct, external commitments, in the 1993 Tinto Model.

The construct of scale 11, Peer Course Selection, concerns registering for a class with someone they know. It can be someone they knew prior to attending school, or someone they have met at the college. It is a direct reflection of social interaction at a community college. It is their own personal building of a learning community. A learning community is a group of peers interacting with each other and/or with the faculty.

The remaining factors are listed on the table for your information, but because the factors are limited to one, two or three items with low alpha levels, they are not used in any future statistical analysis. Only the factor loadings with .38 or above and factors with a reliability scale equal to or larger than .62 are used in further analysis. Therefore the scales used in further analysis are Social Cohesion, Good Study Habits, Peer Academic Cooperation, Seeking Peer Classroom Assistance, Child Care Difficulties, Seeking Faculty Assistance, Time Conflicts, and Peer Course Selection. Figure 3 reflects this change in the 1993 Tinto Model.

Figure 3
Modified Longitudinal Model of Institutional Departure based on Tinto, 1993



Correlation Tables

Now we have two sets of scales, a modified version of the Institutional Integration Scales (IIS) from the 1980 Pascarella and Terenzini study and the new College Experience Survey (CES) developed for community college students. A Pearson Product Moment Correlation was performed to determine any correlation between these two sets of scales. Table 18 displays the Pearson Product Moment Correlations. The following discussion describes the constructs in the table and how they are either distinct from each other and/or very related.

Table 18 - Pearson Product Moment Correlations between Institutional Integration Scales (Pascarella & Terenzini, 1980) and the College Experience Survey

College Experience Scale	Institutional Integration Scale				
	Peer Group Interactions	Faculty Interactions	Faculty Concern for Stu. Development & Teaching	Acad. & Intellectual Development	Perceptions of Faculty
Social Cohesion	.43**	.45**	-.02	.53**	.39**
Good Study Habits	.15**	.18**	-.12*	.50**	.22**
Peer Acad. Cooperation	.61**	.33**	.09	.11	.16**
Peer Classroom Assistance	.57**	.39**	-.02	.25**	.36**
Child Care Difficulties	-.05	.00	-.04	.03	.05
Seeking Faculty Assistance	.26**	.41**	.00	.20**	.18**
Time Conflicts	.08	.06	.01	-.15**	.00
Peer Course Selection	.48**	.24**	.03	.20**	.15**

**p<.01
*p<.05

As shown the CES Social Cohesion Scale is highly (.53) correlated with the IIS Academic & Intellectual Development Scale. While Social Cohesion is a reflection of the student's sense of belonging to the entire institution, this sense of belonging is strongly linked and strengthened through the student's continued progress in academic and intellectual development. Good Study Habits are not highly correlated to most of the factors with the exception of the Academic & Intellectual Development Scale (.50). The perceived development is a reflection of the hours of work and effort put forth to succeed. The Good Study Habits scale shows how the students are attaining their Academic & Intellectual Development.

The Peer Academic Cooperation and the Peer Group Interactions scales at .61** are highly correlated and should be. The questions, however, are quite distinct and attempt to get at the differences in the populations. While a four-year resident student may develop a close personal relationship with other students, it is not as likely, for instance, that an older, married woman would be looking for this type of relationship. Instead the questions in the Peer Academic Cooperation scale demonstrate that there is a relationship, but that the relationship stems from a cooperation in the classroom concerning current academic matters. The relationship may or may not continue past the current classroom activities. Yet a peer relationship is indeed formed. So while both scales are measuring a peer relationship, the CES scale of Peer Academic Cooperation indicates a distinctly different method of relationship formation and duration.

Peer Classroom Assistance also shares a high correlation with the Peer Group Interactions. While The Peer Group Interactions represent a general acknowledgment of interactions, the peer classroom assistance scale is more definitive about the type and procedure of interactions. The interactions take the form of a study buddy, or calling another classmate about homework, or meeting people in between classes. There is less emphasis on a lasting relationship or a strong personal influence.

Other scales such as Child Care Difficulties and Time Conflicts are unique to the commuting community college students. They indicate other commitments that these students have in addition to attending college. Peer Course Selection indicates a particular method of peer group interactions. It describes actions taken by the students in the socialization process.

These factors give a good picture of what the community college students are doing and how they feel integrated. The questions in the College Experience Survey are more specific about that integration. The correlation chart suggests that some of the factors in the 1980 study may have been just as good. While there are some high correlations, it is good to remember that the IIS factors have been modified for this population. The regression analysis that follows will determine which factors are more useful.

Difference Between Student Persisters and Non-Persisters

Table 19 shows the means and standard deviations of the continuous variables in the study by respondents who returned and respondents who did not return to Schoolcraft for the winter term. T-tests were used to determine significant mean differences.

Table 19 - Two Sample T-Tests between Persisters and Non-Persisters for Continuous Variables

Variables	Weighted Persisters		Weighted Non-Persisters		Two Sample T-Test
	M	SD	M	SD	
AgeScale	2.04	1.45	2.22	1.38	
Under 20	56.9%		40.9%		
20-24	15.0%		27.8%		
25-29	8.0%		13.0%		
30-34	7.1%		4.8%		
35 and over	13.0%		13.5%		
Household Income	2.38	1.07	2.10	.81	*
Father's Formal Education	2.59	.84	2.63	.86	
Mother's Formal Education	2.39	.85	2.41	.86	
Placement Scores	59.02	27.84	47.64	23.49	**
Attending college is very important to me	1.06	.23	1.25	.48	***
How committed are you to completing degree	1.22	.68	1.41	.79	
SCC First Choice?	1.27	.57	1.61	1.00	***
GPA	3.07	.85	2.25	1.54	***
IIS A&I Develop.	3.17	.53	2.89	.68	***
CES Good Study	2.74	.58	2.50	.58	***
IIS Fac Inter	2.50	.69	2.37	.78	
IIS Fac Concern	2.39	.77	2.36	.67	
IIS Percep.of fac	3.23	.66	3.11	.78	
CES Fac Assist	2.52	.74	2.43	.72	
IIS Peer Grp Inter	2.69	.71	2.52	.87	
CES Peer Acad Coop	2.05	.69	1.89	.70	

Variables	Weighted Persisters		Weighted Non-Persisters		Two Sample T-Test
	M	SD	M	SD	
CES Peer Class Assist	3.01	.56	2.94	.60	
CES Social Cohesion	3.26	.61	2.90	.73	***
No. of Dependents	1.39	.69	1.44	.74	
CES Child Care Difficulties	1.36	.72	1.33	.68	
CES Time Conflicts	2.72	.83	2.84	.82	
CES Financial Diff.	2.50	1.02	2.75	1.08	*
It is likely that I will register Schoolcraft winter, 1997semester	3.83	.49	2.94	1.16	***

*p<.05, **p<.01,***p<.001

In Table 19, there are 10 variables that reflect significant differences between persisters and non-persisters. There is a significant difference in household income. The persisters have a higher income than the non-persisters (Mp=2.38, Mnp=2.10; $p < .05$). The persisters scored higher on the placement test (Mp=59.02, Mnp=47.64; $p < .01$) than the non-persisters. There were three separate placement tests. However, the students did not have to complete all three tests. Most students completed a computational test called Number Score. The number score was the test score used for the placement score variable. The total possible scores for the ASSET and CPT tests were different. In order to use these scores in further analyses, these scores were standardized. Students who scored higher on this placement test were more likely to return the following semester. A significant difference exists between the persisters and non-persisters in the feeling that attending college is very important to them. The non-persisters indicated a higher mean (Mnp=1.25, Mp=1.06; $p < .001$). The non-persisters, however, were significantly more likely to have chosen Schoolcraft College as a higher choice than the persisters (Mnp=1.61, Mp=1.27; $p < .001$). But the persisters had a significantly higher GPA (Mp=3.07, Mnp=2.25), felt that they were better developed academically and intellectually (Mp=3.17, Mnp=2.89), and also felt they had better study habits (Mp=2.74, Mnp=2.50) all at $p < .001$. The persisters had a significantly higher sense of social cohesion than the non-persisters (Mp=3.26, Mn=2.90; $p < .001$). The non-persisters also had more financial difficulties than the persisters (Mnp=2.75, Mp=2.50; $p < .05$). The persisters were significantly more likely to say that they would register at Schoolcraft College in the winter, 1997 semester (Mp=3.83, Mnp=2.94; $p < .001$).

Table 20 shows the Chi square analysis for the categorical variables to determine any significant relationship between variables. The significant differences are indicated with asterisks.

There are significant differences in whether or not the students were receiving financial aid. Students receiving financial aid were significantly more likely to return the following semester ($p <.05$). Students who said a relative influenced the decision to attend Schoolcraft College were significantly more likely to return the following semester ($p < .01$). Also students that said none of the above (parents, spouse, friends, employers, high school counselors) influenced their decision to attend Schoolcraft College were significantly more likely to return the following semester ($p < .001$).

Table 20 - Chi Square Tests between Persisters and Non Persisters for Categorical Variables

Variables	Persisters		Non-Persisters		Exact/ChiS Test
	n	%	n	%	
Gender					
Male	91	63.2	53	36.8	ChiS
Female	122	71.8	48	28.2	2.62/ns
Marital Status					
Married	43	69.4	19	30.6	ChiS
Else	157	68.6	72	31.4	.071/ns
Receive Financial Assistance					
yes	58	79.5	15	20.5	*
no	154	64.2	86	35.8	
Parent has Bachelor Degree					
yes	37	69.8	16	30.2	ChiS
no	127	75.6	41	24.4	.704/ns
Relatives Influenced Decision	105	81.4	24	18.6	**
No One Influenced Decision	66	60.6	43	39.4	***
First Time Enrolled in College					
yes	167	72.3	64	27.7	**
no	39	53.4	34	46.6	
Intent to Reenroll next Semester					
yes	140	75.3	46	24.7	Chi S
no	12	60.0	8	40.0	2.177/ns
No. of Credit Hours					
=>12	113	76.4	35	23.6	**
<12	99	61.1	63	38.9	
Single Parent					
yes	23	69.7	10	30.3	ChiS
no	162	73.6	58	26.4	.227n/s

*p<.05, **p<.01,***p<.001

There was a significant difference in the variable first time enrolled in college. Student who were enrolled in college for the first time were significantly more likely to return the following semester ($p < .01$). Also full-time students were significantly more likely to return the following semester ($p < .01$) than students attending part-time.

Regression Analysis

Analyses of the full model provides a comprehensive picture of the overall relationship between college experience and student persistence. In order to compare the student responses between the Institutional Integration Survey and the College Experiences Survey, two separate analyses was conducted. First, the full model using three blocks was analyzed using the student responses to the Institutional Integration Survey items, and then a second analysis using four blocks was conducted using the student responses to the College Experiences Survey items. The extra block in the College Experiences Survey results, identified as External Commitment, was an addition to the Tinto Model in 1993.

The results are summarized in Tables 21 and 22. Both Tables include the (standardized) Beta coefficients for variables included in the model after each block and the Beta coefficient for each variable not yet in the model, estimated as if it were to be entered individually in the next step of the regression analysis. This latter information provides insight into the relationships among predictors.

The adequacy of the model being tested by these regression analyses is indicated by the amount of variance in student persistence explained by the regression equations (R^2). This information is provided at the bottom of both Tables 21 and 22. Changes in the amount of variance explained following each block entry were tested in order to identify blocks of variables that significantly contribute to the model's ability to predict student persistence.

Institutional Integration Survey Results

For the first analysis of the responses from the Institutional Integration Survey, the criterion variable, actual re-enrollment of students at Schoolcraft Community College, was used in a blocked regression analysis, with 24 predictor variables in unique three blocks. The three blocks of variables included: Pre-entry Attributes, Initial Goals and Commitments, and Academic/Social Integration. Pre-entry Attributes were measured with gender, age, married, single income, receiving financial aid, mothers' and fathers' educational levels, person living with the student has a bachelor's degree, relative, or no one influential in making decision to attend college, status as "first time in any college," and mathematical placement test score. Initial goals and commitments included intent to re-enroll, college is important, committed to a degree, and whether Schoolcraft was first-choice of institutions. Academic/Social Integration included: GPA obtained from students' records, perceptions of Academic and Intellectual Development, perceptions of Faculty Interaction, perceptions of Faculty Concern for Student Development and Teaching, perceptions of Faculty, student status (less than 12 hours or greater than 12 hours), and perceptions of Peer Group Interactions. These variables represented both nominal and continuous variables. Where variables were nominal, dummy coding was used to allow their inclusion in multiple linear regression analyses. Table 21 summarizes the results of these analyses.

As shown in Table 21, the final regression equation for the IIS analysis (following the entry of Block 3) includes ten significant variables (at alpha=.05) which explain 33.3% of the variance (R^2) in the Tinto Model. This is a moderate amount of explained variance, but does confirm the usefulness of this model in predicting student persistence. The change in R^2 is significant for all three blocks: pre-entry attributes explained 17.4% of the variance: Initial Goals/Commitments explained 7.1% of the variance; and Academic/Social Integration explained 8.8% of the variance. Together these three blocks accounted for 33.3% of the variance of student persistence from one semester to the next in a community college.

Predictors of Student Persistence

At this point identification of the predictors that are significant after the final block provides further information about those variables in the Tinto Model that have the greatest influence on student persistence. The significant predictors in the final equation are presented here in the order of beta magnitude (with the strongest predictors presented first).

Placement Scores

Not surprisingly, one of the strongest of the 10 significant predictors in the regression equation for the Institutional Integration Survey was the placement scores (Beta=.236; $p < .001$) in the Pre-entry Attributes. The positive relationship between the placement scores and student persistence indicated that students who had higher scores on the test were more likely to return to Schoolcraft College the following semester than students with lower placement scores. Students who score higher on the placement

Table 21 - Beta Coefficients for Blocked Entry Regression of Retention on Pre-Entry Attributes, Initial Goals/Commitments, and modified IIS Academic/Social Integration (n=319)

Variable Name	Block 1	Block	Block 3
Pre-Entry Attributes			
Gender	.109	.075	.066
Age	.037	.057	.012
Married	.067	.046	.017
Single	.131	.180*	.145
Income	.170**	.200***	.180**
Received Financial Aid	.203***	.196***	.150**
Mother's Education	-.051	-.074	-.063
Father's Education	-.000	.010	.023
Parent/Bachelor Degree	-.034	-.019	-.009
None Influenced Decision to attend Schoolcraft	-.256**	-.250**	-.182*
Relative/Friend/Spouse Influenced Decision	-.090	-.113*	-.086
First Time College Student	.146*	.110	.137*
Placement Score	.226***	.240***	.236***
Initial Goals/Commitments			
Intent to reenroll	_.013_	.029	.027
Attending College is Important to me	_.231_***	.216***	.167**
Committed to Degree	_.060_	.014	.007
Schoolcraft College First Choice?	_.181_***	.159**	.141**
Academic/Social Integration			
College GPA	_.324_***	_.284_***	.220***
Academic/Intellectual Development	_.243_***	_.217_***	.137*
Faculty Interactions	_.098_	_.063_	.031
Faculty Concern for Student Dev & Teach	_.039_	_.048_	.110*
Perceptions of Faculty	_.080_	_.005_	-.051
Full Time Student	_.152_**	_.120_*	.096
Peer Group Interactions	_.108_*	_.062_	-.012
R^2+	.174***	_.245_***	.333***

* .01<p<.05, ** .001<p<.01, ***p<.001
+Asterisks indicate significance in change in R^2 following entry of each block.
Beta coefficients presented in smaller type italics represent the beta coefficient for each variable not in the model if it were to be entered by itself in the next step.

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scores are better prepared to achieve success in the classroom academically. Yet it is apparent that this is not the only predictor that is significant because being academically prepared does not guarantee persistence.

College GPA

In accordance with placement scores, the next strongest predictor of persistence is the college GPA (Beta=.220; p<001) in the Academic/Social Integration group. The student that receives good grades receives an indirect message that they can perform on the collegiate level. They were focused and worked to achieve. Barring any other impediments, they are encouraged to return the following semester.

None Influenced Decision

The variable of students that chose none of the standard role models (e.g. parents, spouse, friends, employers, high school counselors) as an influence in the decision to attend Schoolcraft College in the Pre-entry Attributes is the next strongest predictor (Beta=-.182;p<.01). There is a significant negative relationship between those students that chose none of these as an influence in their decision attend Schoolcraft and returning to Schoolcraft College the following semester. The negative relationship means that students who said that no one influenced them to attend Schoolcraft were less likely to be retained than others who had some role model or external influence.

Income

The next strongest predictor of persistence is income (Beta=.180<.01) in the Pre-entry Attributes. The positive relationship between income and student persistence indicated that the higher the pre-entry attribute of household income the more likely that the student would persist to the next semester than students with a lower income. This result may indicate that higher income households may encourage college attendance more.

Attending College is Important to Me

Attending College Is Important (Beta=.167<.01) in the Initial Goals and Commitments category is the next strongest predictor variable. The positive relationship between the importance of attending college and student persistence indicated that students who placed a greater importance on attending college were more likely to re-enroll for a second semester than students who placed less importance on attending college.

Financial Aid

The Pre-entry Attribute, receiving financial aid has a significant relationship to student persistence (Beta=.150; p<.01). Those students receiving financial aid were more likely to return the following semester than students who were not receiving financial aid. These results indicate that students may more likely feel a commitment to return the following semester because of the financial aid. Conversely those students with financial difficulty may find it more difficult to return the following semester.

Schoolcraft College First Choice

In Initial Goals/Commitments, there was a significant relationship between student persistence and whether Schoolcraft College was the student's first choice of a college to attend (Beta=.141; p < .01). Students at a community college may transfer to a four-year institution at any time. If finances or grades were a deterrent, then when those problems were solved, the student could move on to a four-year institution. However, if the student was committed to attending Schoolcraft College as their first choice institution, then (with other factors in place), the student will return the following semester.

First Time College Student

Another significant predictor in Initial Goals/Commitment was whether the student was a first-time college student (Beta=.137; $p < .05$). The positive relationship indicated that students who were first-time college students were more likely to re-enroll for a second semester than students who were not first time college students. This result suggests that a student who is a first-time student is more likely to return the following semester, rather than the student who has dropped out of college before. A community college provides the environment for students to drop in and drop out so that going to college can co-exist with their ongoing adult life. It is also difficult to attract more first-time college students as an institutional strategy; therefore, attention to other factors in persistence is very important in terms of practice.

Academic/Intellectual Development

In Academic/Social Integration, a significant relationship was found between the Academic/Intellectual Development factor and student persistence (Beta=.137<.05). This result indicates that those students that are satisfied with the academic experience and feel that they have performed to their ability and have increased their knowledge are more likely to persist to the following semester. There is also a high correlation between GPA and Academic/Intellectual Development.

Faculty Concern for Student Development and Teaching

The last significant predictor in Academic/Social Integration was the factor, Faculty Concern for Student Development and Teaching (Beta=.110 ; $p < .05$). Those students who felt that the Faculty were concerned for their student development and were interested in teaching were more likely to return than students who did not believe that the faculty was concerned about the student's development. This suggests that relations with faculty, the student-centered climate of the classroom, and the behavior of faculty are important in setting the tone for students' feeling validated and ultimately retained in this community college. Surprisingly, however, the only factor that could exactly be replicated from IIS, Faculty Interactions, was not a significant predictor of persistence in this population.

College Experiences Survey Results

For the second regression analysis, the criterion variable, actual re-enrollment of students at Schoolcraft Community College, was again used in a blocked entry regression analysis, with 30 predictor variables in unique four blocks. The four blocks of variables included: pre-entry attributes, entry goals and commitments, institutional experiences, and external commitments. The first two blocks are the same as the Institutional Integration Survey model. The differences occur with the measures of the institutional experiences as shown in the Academic/Social Integration block and the added block of External Commitments.

Institutional experiences included GPA obtained from students' records, and the factors obtained from the factor analysis: Social Cohesion, Good Study Habits, Peer

Academic Cooperation, Seeking peer Classroom Assistance, Seeking Faculty Assistance, and Peer Course Selection. External commitments represent an addition to the 1993 Tinto Model, therefore, they are not reflected in the Institutional Integration Survey results. External commitments were measured by single parent status, number of dependents, child care difficulties, time conflicts, and financial difficulties. Where variables were nominal, dummy coding was used to allow their inclusion in blocked entry multiple linear regression analyses.

Table 22 summarizes the regression analysis for the College Experiences results. The final regression equation for the College Experiences Survey (CES) (following the entry of block 4) also includes ten significant variables (at alpha=.05) which explains 37.3% of the variance in student persistence. As with the IIS, this is a moderate amount of explained variance and confirms the usefulness of this model in predicting student persistence. The change in R^2 is significant for three of the four blocks: pre-entry attributes explained 17.4% of the variance; Initial Goals/Commitments explained 7.1% of the variance; Academic/Social Integration explained 12.0% of the variance. Together the three blocks accounted for 36.5% of the variance in student persistence according to the College Experiences Survey.

The fourth block, External Commitments explained .8% of the variance in student persistence, but contained no specific significant predictor of student persistence. Surprisingly, the External Commitments were a test of a recent extension of the Tinto Model which received no confirmation in this study. However, these external commitments were highly correlated with the pre-entry attributes such as age, married, single parent, that were already entered in the model. At the same time, the initial correlations indicated that none of the External Commitments except financial difficulty are directly related to persistence. None of these are significant, and thus, the findings suggest external commitments do not hinder reenrollment of nontraditional students.

Again further identification of the predictors that are significant after the final block provide additional information about those variables in the Tinto Model that have the greatest influence on student persistence. The significant predictors in the final equation are presented in the order of beta magnitude (with the strongest predictors presented first).

College GPA

As shown in Table 22, The strongest of the ten significant predictors in the regression equation for the College Experiences Survey is the College GPA (Beta=.256; $p < .001$) in the Academic/Social Integration block. The positive relationship between the GPA and student persistence indicated that students with a higher GPA were more likely to re-enroll for a second semester than students with a lower GPA. However, just receiving good grades does not guarantee that the student will return the following semester.

Table 22 - Beta Coefficients for Blocked Entry Regression of Retention on Pre-Entry Attributes, Initial Goals/Commitments, CES Academic/Social Integration, and External Commitments.
(n=319)

Variable Name	Block	Block 2	Block	Block
Pre-Entry Attributes				
Gender	.109	.075	.048	.032
Age	.037	.057	-.031	-.036
Married	.067	.046	-.022	.033
Single	.131	.180	.123	.180
Income	.170**	.200***	.141*	.140*
Receive Financial Aid	.203***	.196***	.124*	.115*
Mother's Education	-.051	-.074	-.068	-.091
Father's Education	-.000	.010	.022	.022
Parent/Bachelor Degree	-.034	-.019	-.051	-.007
None Influenced Decision to attend SC	-.256**	-.250**	-.193*	-.201*
Relative/Friend InfluencedDecision to attend SC	-.090	-.113	-.076	-.073
First Time College Student	.146*	.110	.103	.100
Placement Score	.226***	.240***	.225***	.216***
Initial Goals/Commitments				
Intent to reenroll	.013	.029	.038	.041
Attending College is Important to me	.231***	.216***	.126*	.123*
Committed to Degree	.060	.014	-.001	-.005
Schoolcraft College First Choice?	.181***	.159**	.140**	.137**
Academic/Social Integration				
College GPA	.324***	.284***	.246***	.256***
Good Study Habits	.223***	.170**	.036	.035
Seeking Faculty Assistance	.075	.066	.020	.023
Full Time Student	.152*	.120*	.061	.060
Social Cohesion	.260***	.199***	.157*	.160*
Peer Academic Cooperation	.108	.071	.002	.009
Seeking Classroom Assistance	.042	.001	-.162*	-.151*
Peer Course Selection	.201***	.183***	.187**	.185**
External Commitments				
Single Parent	-.003	-.001	.038	.044
Number of Dependents	-.038	-.062	-.033	-.065
Child Care Difficulties	.063	.046	.084	.087
Time Conflicts	-.066	-.054	.006	.001
Financial Difficulties	-.061	-.037	-.016	-.033
R^2+	.174***	.245***	.365***	.373

* .01<p<.05, ** .001<p<.01, ***p<.001
+Asterisks indicate significance in change in R^2 following entry of each block.
Beta coefficients presented in smaller type italics represent the beta coefficient for each variable not in the model if it were to be entered by itself in the next step.

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Placement Score

The next strongest significant predictor is Placement Score (Beta=.216; $p < 001$) in the Pre-entry Attributes block. The positive relationship indicated that students with higher scores were more likely to return the following semester than students with lower scores. These results indicate that those students who were better prepared for college work were more likely to persist.

None Influenced Decision

The next significant predictor is if none influenced the student's decision to attend Schoolcraft College (Beta=-.201 $p < .05$). There is a significant negative relationship between students that chose none as opposed to parents, spouse, friends, employers, high school counselor and persisting to the next semester. This suggests that such students without significant others' encouragement to attend Schoolcraft are less likely to be retained. The source of such support is less clear because those with relatives or friends was not more important than having some type of external support for attendance.

Peer Course Selection

Another significant predictor was the Academic/Social Integration factor, Peer Course Selection (Beta=.185; $p < .01$). The positive relationship indicated that students who enrolled with a friend or friends were more likely to return the following semester than those students who did not enroll with a friend or friends. These results suggest that forming a friendship or forming a cohort of peers who take the same classes is very important to persistence.

Social Cohesion

The next significant predictor was the Academic/Social Integration factor, Social Cohesion (Beta=.160; $p < .05$). The positive relationship indicated that students who felt a part of the college community were more likely to return the following semester than students who do not feel as if they belong there. These results suggest that those students who feel both a sense of morale and a sense of belonging at Schoolcraft will return to attend and possibly complete their degree there.

Seeking Classroom Assistance

Another Academic/Social Integration factor that was significant is Seeking Classroom Assistance (Beta=-.151; $p < .05$). The negative relationship indicates that those students who sought help with their classroom work were more likely to not enroll in the following semester than students who did not seek assistance. This variable has a suppressor effect. It is a positive effect (not significant) until the third block is entered with the integration measures, and then it becomes a negative effect. This variable has a high positive correlation with Peer Academic Cooperation, Social Cohesion and Seeking Faculty Assistance. This suggests that accounting for these measures is critical in interpreting the context for seeking assistance in the classroom. Generally students seek assistance when they feel integrated, those who seek assistance but do not feel integrated are not likely to persist.

Income

The pre-entry attribute of income is also a significant predictor of persistence (Beta=.140; $p < .05$). The positive relationship between income and persistence indicates that those students with a higher income are more likely to return the following semester than those students with a lower income level. These results could suggest that those students with little or no financial problems are more likely to return or that those students who come from a higher income level family place more importance on college attendance.

Schoolcraft College First Choice

Those students that choose to attend Schoolcraft College as a first choice are more likely to return the following semester than those students who did not choose Schoolcraft College as their first choice (Beta=.137; $p < .05$). These results suggest that those students who deliberately choose to attend this community college have some specific reasons for picking this college and are committed to attending.

Importance of Attending College

Attending College is Important to Me is also a significant predictor for persistence to the next term (Beta=.123; $p < .05$). The positive relationship indicates that those students who felt that attending college was important were more likely to return the following semester than those students who did not feel that attending college was important. These results indicate the importance of a strong goal commitment in order to persist.

Financial Aid

The last significant predictor of persistence is receiving financial aid (Beta=.115; $p < .05$). The positive relationship of both income and financial aid indicates that those students who have less financial worries are more likely to return the following semester than those students who are not well off or receive little financial aid. These overall results suggest that attending to students' financial concerns is important to enable students to do well in college.

As a special note, the Tinto (1995) model used goals and commitments a second time after the college experiences. This study intended to use those same goals and commitments after the college experiences, however, the response to the survey was slow and after several reminders much time had elapsed. This resulted in some students answering the survey at the same time they were registering for the second semester or even had already registered for the second semester. Based on these circumstances, even though this study had intended to use goals and commitments at a second time point, it did not seem practical to do so. So you will notice that goals and commitments at a second time point are not included in the multiple regression analysis nor the final model in the methods section.

Regression Models Comparison

Remember that the Institutional Integration Survey was devised and used in 1980 at a four-year residential college. That same instrument has been used at two-year, four-year, residential and commuter colleges since that time. In the interim, however, college demographics have changed considerably. The intent of this study was to determine if using a survey instrument, more attuned to the new demographics, would produce different results. Therefore two separate analyses were performed to show the differences of the two survey instruments.

Table 23 depicts the comparison of the two regression models. The original Institutional Integration Survey contained four blocks, the three shown here plus Goals and Commitments that follow the Academic/Social Integration. In this study those goals and commitments could not be replicated in the factor analysis, so they were not used. A possible explanation is that this survey was done eight weeks into the semester, which was considered the optimal time frame. Soon after this the students were beginning to register for the next semester. In order to acquire a suitable response, the time frame for the response had to be lengthened which exacerbated the situation. So it is possible that a student could be completing the survey and have already registered for the following semester.

Table 23 - CES & IIS Variables Impact on Persistence

IIS Model	R Square	CES Model	R Square
1 - Pre Entry Attributes	.174	1 - Pre Entry Attributes	.174
2 - Initial Goals/Comm.	.245	2 - Initial Goals/Comm.	.245
3 - Academic/Social Int.	.333	3 - Academic/Social Int.	.365
		4 - External Commitments	.373

Since the Pre-entry Attributes and the Initial Goals/Commitments were the same for both regression models, the only real difference in the models is the Academic/Social Integration and the External Commitments used in the CES model. The Academic/Social Integration survey items used in the CES model were specifically tailored for the students attending community colleges. The External Commitments were included in the CES model because Tinto (1993) added these to the new revised model for student persistence.

As you can see in Table 23, the Academic/Social Integration in the CES model modestly increased the explanatory power of the model. For the External Commitments the f change was not significant, indicating that these do not appear to directly influence student persistence as the 1993 Tinto model predicted.

While the modified IIS model accounted for about a third of the variance in student persistence, the CES model was slightly better. This increase was a result of having more specific measures that were particular for community college students. The survey items focused on more relevant situations for community college students. The Peer Course Selection measure, in particular, was significant. Students choosing to take classes with other students they already know, produces, in effect, a cohort group. Thus they create for themselves a support group to help their own persistence. The modified IIS model with a R^2 of .333 is a fairly strong model and shows that it would work in a community college setting. However, the more relevant CES model with a R^2 of .373 did increase the explanatory power of the model.

Further Analysis on Sub Groups

Further analysis seemed warranted. I had proposed to examine social integration for various sub-groups. So regression analysis was performed to measure differences in academic/social integration in sub groups such as male, female, full-time and part-time students, and older, younger students to see what impact this has on their persistence.

The full sample regression revealed no significant differences for male and female students or older and younger student samples. However, there appeared to be significant differences between full- and part-time students. There is also a dearth of information for the comparison of part-time and full-time students so I have selected a limited number of variables and conducted the regression analysis for those samples. The results are discussed below.

For the analysis, the criterion variable, actual re-enrollment of students at Schoolcraft Community College, was again used in a blocked entry regression analysis, with only three blocks of College Experiences Survey and the three blocks of the Institutional Integration Scale. The third block of variables in both analyses is the block that consisted of the Academic/Social Integration variables. This particular block is also the major difference between the IIS survey and the CES survey.

CES Analysis for Part-time and Full-time Students

Part-time Students

As shown in Table 24, the variables used in the Pre-entry Attributes were Age, Income, Received Financial Aid, None Influenced Decision to attend Schoolcraft, and Placement Score. The lone Initial Goal/Commitment was Attending College is Important to me. The Academic/Social Integration variables were limited to College GPA, Good Study Habits, Seeking Faculty Assistance, Social Cohesion, Peer Academic Cooperation and Peer Course Selection. This limited set of variables were chosen based on the significant variables derived from the whole group analyses in addition to the consideration for an encompassing range of variables in the model.

The final regression equation for the part-time students for the CES variables includes four significant (at alpha=.01) direct effects in the Tinto Model. This is a moderate amount of explained variance, but does confirm the usefulness of this model in predicting part-time student persistence. The change in R^2 is significant for all three blocks: Pre-entry attributes explained 14.4% of the variance; Initial Goals/Commitments explained 7.4% of the variance; and Academic/Social Integration explained 15.7% of the variance. Together these three blocks accounted for 37.5% of the variance of student persistence from one semester to the next in a community college. The significant predictors in the final equation are presented here in the order of beta magnitude (with the strongest predictors presented first).

Table 24 - Beta Coefficients for Blocked Entry Regression of Retention on Pre-Entry Attributes, Initial Goals/Commitments, Academic/Social Integration (CES Variables) for Part-time Students (Weighted)
(n=162)

Variable Name	Block 1	Block 2	Block 3
Pre-Entry Attributes			
Age	.072	.055	-.151*
Income	.106	.112	.047
Receive Financial Aid	.057	.041	.002
None Influenced Decision	-.298***	-.251***	-.193**
Placement Score	.206**	.251***	.285**
Initial Goals/Commitments			
Attending College is Important to	*-.281****	-.281***	-.136
Academic/Social Integration			
College GPA	*.425****	*.376****	.316**
Good Study Habits	*.396****	*.330****	.111
Seeking Faculty Assistance	*.115*	*.108*	.022
Social Cohesion	*.320****	*.245***	.064
Peer Academic Cooperation	*.220***	*.175**	.124
Peer Course Selection	*.233***	*.196***	.065
R^2+	*.144****	*.218****	*.375***

* $.01<p<.05$, ** $.001<p<.01$, ***$p<.001$
+Asterisks indicate significance in change in R^2 following entry of each block.
Beta coefficients presented in smaller type italics represent the beta coefficient for each variable not in the model if it were to be entered by itself in the next step.

College GPA

Not surprisingly the strongest of the four predictors in the regression equation for the CES survey was GPA (Beta=.316; $p < .001$) in the Academic/Social Integration category. It is the only significant variable in this category. Those part-time students who have a higher GPA are more likely to return the following semester than those students who have a lower GPA. Note however, that before GPA was entered into the equation, the other Academic/Social Integration variables Good Study Habits, Social Cohesion, Peer Academic Cooperation and Peer Course Selection were significant. It is only when GPA is entered into the equation that it becomes the lone significant variable. The other integration variables appear to have an indirect effect on persistence for the part-time student and may work through college GPA. As it turns out Good Study Habits and Social Cohesion are strongly associated with GPA among part-time students. This indicates that integration is important because it influences the performance of part-time students.

Placement Score

The next strongest variable is the Pre-entry Attributes category variable, Placement Score (Beta=.285; $p < .001$). Those students with a higher placement score are more likely to return the following semester than those students with a lower placement score.

None Influenced Decision to attend Schoolcraft

Again in the Pre-entry Attributes category, the variable None of the standard role models (e.g. parents, spouse, friends, employers, high school counselors) Influenced

Decision to attend Schoolcraft (Beta=-.193; $p < .01$) was the next strongest predictor. There is a significant negative relationship between those students that chose none of these as an influence in their decision to attend Schoolcraft and returning to Schoolcraft College the following semester. This means that students who said that no one influenced them to attend Schoolcraft were less likely to persist than others who had some role model or external influence.

Age

In the Pre-entry Attributes category, the variable Age (Beta=-.151; $p < .05$) is the next strongest predictor. This indicates there is a significant negative relationship between age and persistence to the following semester. That is, older part-time students are less likely to reenroll than younger part-time students.

Full-time Students

Table 25 summarizes the results for the full-time students. The same 12 variables were used in the regression equation which explains 32.3% of the variance (R^2) in the Tinto Model. This is slightly less than for the part-time students, but does explain a moderate amount of the variance. The change in the R^2 is significant for the first block and the third block. The six significant variables are discussed in the following paragraphs in order of strength.

Received Financial

For full-time students the strongest variable is Received Financial Aid (Beta=.318; $p < .001$). This means that those students that receive financial aid are more likely to return the following semester than those students who do not receive financial aid. This is understandable because of the cost of the education. Students receive aid in various forms such as money or as a work-study aid.

Social Cohesion

The next strongest variable is Social Cohesion (Beta= .268; $p < .01$). The results suggest that those full-time students who feel both a sense of belonging and a sense of morale are more likely to return the following semester.

Peer Academic Cooperation

Peer Academic Cooperation (Beta=-.266;$p < .01$) has a negative significant relationship with persistence. This suggests that students who are not integrated are not comfortable with asking for help and are less likely to return the following semester.

Peer Course Selection

The next strongest variable is Peer Course Selection (Beta=.225;$p < .05$). The positive relationship between this variable and persistence suggests that those students who plan to take another course with someone they know or have met someone they will take a course with are more likely to return the following semester than those students who do not plan courses with peers.

Income

The next variable is Income (Beta=.213; $p < .05$). Income has a positive relationship with persistence which indicates that those full-time students with a higher income are more likely to return the following semester than those students with a lower income.

Age

The last variable is Age (Beta=-.186). Age has a negative significant relationship with returning the following semester. Older full-time students are less likely to reenroll than younger full-time students.

Table 25 - Beta Coefficients for Blocked Entry Regression of Retention on Pre-Entry Attributes, Initial Goals/Commitments, Academic/Social Integration (CES Variables) for Full-time Students Weighted) (n=147)

Variable Name	Block 1	Block 2	Block 3
Pre-Entry Attributes			
Age	.128	-.133	-.186*
Income	.153	.157	.213*
Receive Financial Aid	.398***	.397***	.318***
None Influenced Decision	-.040	-.037	.004
Placement Score	.114	.111	.054
Initial Goals/Commitments			
Attending College is Important to	_-.062_	-.062	-.040
Academic/Social Integration			
College GPA	_.151_	_.146_	.155
Good Study Habits	_.095_	_.092_	.081
Seeking Faculty Assistance	_-.057_	_-.055_	-.086
Social Cohesion	_.275***_	_.272***_	.268**
Peer Academic Cooperation	_-.086_	_-.094_	-.266**
Peer Course Selection	_.188*_	_.187*_	.225*
R^2+	_.157***_	_.161_	_.323***_

* .01<p<.05, ** .001<p<.01, ***p<.001
+Asterisks indicate significance in change in R^2 following entry of each block.
Beta coefficients presented in smaller type italics represent the beta coefficient for each variable not in the model if it were to be entered by itself in the next step.

Modified IIS Analysis for Part-time, Full-time Students

Part-time Students

Table 26 summarizes the results of the regression analysis for 12 IIS variables and Part-time students. In Pre-entry Attributes, the variables are Age, Income, Received Financial Aid, None Influenced Decision to attend Schoolcraft, and Placement Score. Attending College is Important to Me is the only Initial Goal/Commitment variable. The

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Academic/Social Integration variables include College GPA Academic/Intellectual Development, Faculty Interaction, and Peer Group Interaction. The final regression equation includes four significant variables (at alpha=.05) which explain 35.5% of the variance (R^2) in the Tinto Model. Again this is a moderate amount of variance explained and slightly less than the CES variables. The change in R^2 is significant for all three blocks: Pre-entry Attributes explained 14.4% of the variance; Initial Goal/Commitment explained 7.4% of the variance; Academic/Social Integration explained 13.7% of the variance. The four significant predictors in the final equation are presented here in the order of beta magnitude.

College GPA

The strongest predictor is College GPA (Beta=.350; $p < .001$). This positive significant relationship indicates that those part-time students with higher a GPA are more likely to return the following semester.

Placement Score

The next strongest predictor is Placement Score (Beta=.274; $p < .001$). Again the positive relationship between Placement Score and persistence indicates that those students who score higher on their placement tests are more likely to return the following semester than those students who score lower on the initial placement tests.

None Influenced Decision to attend Schoolcraft

The next strongest predictor, None Influenced Decision to attend Schoolcraft, (Beta=-.214; $p < .01$) indicates that there is a negative significant relationship between those students who stated None of the standard role models influenced their decision to attend Schoolcraft and persistence. This means that students who said that no one influenced them to attend Schoolcraft were less likely to persist than those who had some role model or external influence.

Table 26 - Beta Coefficients for Blocked Entry Regression of Retention on Pre-Entry Attributes, Initial Goals/Commitments, Academic/Social Integration (IIS Variables) for Part-time Students (Weighted) (n=162)

Variable Name	Block 1	Block 2	Block 3
Pre-Entry Attributes			
Age	.072	.055	-.133
Income	.106	.112	.067
Receive Financial Aid	.057	.041	.009
None Influenced Decision	-.298***	-.251***	-.214**
Placement Score	.206	.251***	.274***
Initial Goals/Commitments			
Attending College is Important to me	_-.281_***	-.281***	-.174*
Academic/Social Integration			
College GPA	_.425_***	_.376_***	.350***
Academic/Intellectual Development	_.304_***	_.268_***	..055
Faculty Interaction	_.175_*	_.136_	.108
Peer Group Interaction	_.225_**	_.181_*	.088
R^2+	_.144_***	_.218_***	_.355_***

* .01<p<.05, ** .001<p<.01, ***p<.001
+Asterisks indicate significance in change in R^2 following entry of each block.
Beta coefficients presented in smaller type italics represent the beta coefficient for each variable not in the model if it were to be entered by itself in the next step.

Attending College is Important to me

The last significant predictor is Attending College is Important to Me (Beta=-.174 p < .05). There is a negative significant relationship between the importance of attending college and persistence to the next semester. This may indicate that attending college was of less personal importance than perhaps to their family or significant others.

Full-time Students

Table 27 summarizes the regression analysis results for the IIS variables for Full-time students. The regression equation includes three significant variables (at alpha=.05) which explains 23.8% of the variance (R^2) in the Tinto Model. The change in R^2 is significant for the first and third block: Pre-entry Attributes explained 15.7% of the variance; Initial Goal/Commitment explained .04% of the variance; and Academic/Social Integration explained 7.8% of the variance. The significant predictors in the final equation are presented here in the order of beta weight.

Received Financial Aid

The strongest predictor for full-time students is Received Financial Aid (Beta=.368; $p < .001$). There is a significant positive relationship between receiving financial aid and persistence to the next semester. This indicates that those full-time students receiving financial aid are more likely to return the following semester than those full-time students who are not receiving financial aid.

Academic/Intellectual Development

The next strongest significant predictor is Academic/Intellectual Development (Beta=.284; $p < .01$). The positive significant relationship between Academic/Intellectual Development indicates that those students who are satisfied with their intellectual development and academic performance are more likely to return the following semester than those students who are not satisfied. It is reasonable that those students who feel they understand and are growing intellectually are interested in returning the following semester.

Age

The last significant predictor is Age (Beta=-.181; $p < .05$). There is a negative significant relationship between age and persistence, as shown in previous regressions.

Table 27 - Beta Coefficients for Blocked Entry Regression of Retention on Pre-Entry Attributes, Initial Goals/Commitments, Academic/Social Integration (IIS Variables) for Full-time Students (Weighted) (n=147)

Variable Name	Block 1	Block 2	Block 3
Pre-Entry Attributes			
Age	-.128	-.133	-.181*
Income	.153	.157	.146
Receive Financial Aid	.398***	.397***	.368***
None Influenced Decision	-.040	-.037	-.014
Placement Score	.114	.111	.103
Initial Goals/Commitments			
Attending College is Important to me	_-.062_	-.062	-.057
Academic/Social Integration			
College GPA	_.151_	_.146_	.041
Academic/Intellectual Development	_.237_**	_.237_**	.284**
Faculty Interaction	_-.005_	_-.004_	-.067
Peer Group Interaction	_-.071_	_-.071_	-.131
R^2+	_.157_***	_.161_	_.238_*

* .01<p<.05, ** .001<p<.01, ***p<.001

+Asterisks indicate significance in change in R^2 following entry of each block.

Beta coefficients presented in smaller type italics represent the beta coefficient for each variable not in the model if it were to be entered by itself in the next step.

Table 28 is a summary of the CES and IIS variables with part-time and full-time students. Notice that for the part-time students for both sets of variables the only significant predictor is the College GPA. The difference lies in the results for the full-time students. Still with the IIS variables only an academic integration variable is significant. It is interesting to note that it is not the GPA but Academic/Intellectual Development. However with the CES variables for full-time students, all the significant predictors are social integration variables: Social Cohesion, Peer Academic Cooperation, and Peer Course Selection. Also note that the increase in the R^2 for IIS variables for the full-time students is weaker than for the other three groups.

Table 28 - Comparison of IIS and CES Academic/Social Integration Variables Regression Results with Part-time and Full-time Students

Students	CES Significant Variables	Increase in R^2	IIS Significant Variables	Increase in R^2
Part-time Students	GPA .316***	.157***	GPA .350***	.137***
Full-time Students	Social Cohesion .268** Peer Acad Coop -.266** Peer Course Sel. .225*	.162***	Acad/Int Dev .284**	.078*

Overall, these results indicate that full-time students in this community college population do not respond well to the IIS variables even though the IIS survey was designed for full-time students. This is further confirmation that the CES variables are somewhat more relevant for full- and part-time nontraditional students.

CHAPTER V

DISCUSSION

A changing college population that is diverse in age, marital status, social economic status, and residency suggests that educational research more fully probe these changes and their relationship to persistence. Past research has centered on the more traditional four-year resident student. This study examined the impact that social and academic integration has on this new modern-day college population and their collegiate persistence. Building on Tinto's 1993 theoretical model of institutional departure, I identified those variables that encourage persistence and assessed the impact.

Tinto's 1993 model of institutional departure states that students arrive at college with certain pre-entry attributes such as family background, skills and abilities and prior schooling. In addition students have intentions, goals and institutional commitments and external commitments. After the students begin classes, they are exposed to institutional experiences. Those experiences include interactions with faculty, staff, and other students, their academic performance, and other extracurricular activities. These experiences translate into the student's academic and social integration. Depending on the strength of this integration, the original intentions, goals and institutional commitments are either fortified, diminished or changed which results in college the College Experience Survey (CES), was devised tested and used at Schoolcraft College in Livonia, Michigan.

The College Experience Survey, was devised from a modification of the IIS Survey and based on peer and faculty interactions items developed from two focus groups of community college students. The College Experience Survey was intended to more fully evaluate the social and academic integration of a community college population--one that is more diverse in age, marital status, social economic status and residency. The objective of my study was to more accurately examine the persistence of the more varied community college population by using the College Experience Survey together with the pre-entry attributes, and early goals and commitments captured at college entry.

Summary of Results

Following the methodology of study conducted by Pascarella & Terenzini in 1980, the results of this study confirmed the usefulness of the CES measure of integration for nontraditional students as a valid predictor of persistence. The results for the impact of social integration for nontraditional students were less than anticipated. While the results were consistent with other studies, additional findings do emerge. In this final chapter I summarize those findings. This was an institutionally-based study, and so in this chapter I discuss how findings suggest practical applications to help retention at the institution. Finally, the study concludes with suggestions for future research possibilities.

Usefulness of the IIS Measure

In the past, researchers have used various methods to measure and predict student persistence (Munro, 1981; Pascarella, Chapman, 1983; Weidman, White, 1985; Attinasi, 1989). However, in 1980 Pascarella and Terenzini conducted a study at a residential college in which they developed a 34 question survey. This survey was to operationalize the concepts in the 1975 Tinto model of institutional departure. The survey is called the Institutional Integration Scales (IIS). The IIS became a standard that many researchers used in subsequent studies. In my literature search, I cited 15 studies between 1980 and 1993 that used either IIS exclusively or in conjunction with their own researcher-designed items. While certain survey items are universal and measure areas of faculty concern for student development, academic development, and goals and commitments, portions of the IIS were predicated on traditional, residential students. Because of the diverse student population, those portions needed to be reevaluated. In response to this problem, I built upon research conducted over the last 20 years and used two student focus groups to devise more pertinent questions for the diverse student population. This resulted in a new instrument called the College Experiences Survey (CES).

The results show that using the standard assessment tool, a modified version of factors from the IIS survey, on the Schoolcraft College population, an adequate explanation of variation in the group membership (R^2=.333) could be achieved. It should be noted that only one of the factors from the original study (Pascarella & Terenzini, 1980) could be replicated, however. This required a modified set of measures for this population. Using the CES survey, however, the results of the regression analysis show a stronger explanation of variation in the group membership (R^2=.373). However, perhaps most importantly, the CES maintained its relevance and utility in explaining persistence for part-time and full-time nontraditional students. It appears the CES (R^2=.32) was substantially better at predicting full-time nontraditional student experiences than was the IIS (R^2=.24). These results are important because the initial IIS was originally designed for full-time students. Because these results compare favorably with the past Pascarella and Terenzini study (1980), both the modified version of the IIS measures and the CES measures can be used as valid predictors of persistence of college students. The CES, however tends to capture both students' sense of cohesion with the overall community as well as more specific behaviors that best capture nontraditional students' experiences.

Unreplicable Results of IIS: Student Goal Commitments

As stated earlier, only 1 of 5 factors of the IIS in the 1980 Pascarella & Terenzini study could be exactly replicated on this community college population. Of particular interest is students Goals/Commitment factor. The analysis did not replicate a goal/commitment factor in T_2 as in the Pascarella & Terenzini (1980) study. While these students do have goals, the survey items were not sufficiently correlated to produce that factor. According to Tinto (1993), the goal commitment refers to the individual's personal commitment to educational or occupational goals and the institutional commitment refers to the individual's commitment to the educational institution that he/she has chosen. The greater one's commitments, the greater the likelihood of institutional persistence (Mallette and Cabrera, 1991). Cope and Hannah (1975) concluded that, "personal commitment to either an academic or occupational goal is the single most important determinant of persistence in college" (1975). Tinto (1993) refers to another study done by Hackman and Dysinger (1970) that determined that students with high competence and moderate to high goal commitment were most likely to persist. Likewise, students with both low competence and moderate to low commitment were the most likely to depart and not enroll elsewhere. Whereas students with moderate to high competence and moderate to low institutional commitment may depart and reenroll in another institution.

Unlike the 1983 Pascarella and Terenzini study, this study could not establish a goal factor in the factor analysis. According to the Tinto (1975) model of institutional departure, after the institutional social and academic integration experiences, the student's goals and commitments should be either strengthened or diminished depending on the experiences. If strengthened, then the student persists, and if diminished then the student tends to withdraw. In my study, it appears that either the students goals were so variable or that the items were not relevant to their experience. The most prevalent reason that students give for attending a community college is that it is close and financially attractive. These reasons also may not be enough motivation to inspire high institutional commitment. For whatever the reason, the goal and institutional factor on the IIS could not be replicated in this population. Still, several other items were able to capture Schoolcraft College students' goals and commitments with good results.

The significant variables in Initial Goals/Commitments were Attending College is Important and Schoolcraft College is First Choice. This indicates that some students initially began their collegiate career with a strong goal and high commitment to Schoolcraft College. While intervening college experiences may modify a student's goal and commitment, this study generally supports Hackman and Dysinger (1970) findings that a strong goal leads to persistence among students.

Academic and Social Integration Among Nontraditional Students

Major concepts in the Tinto (1993) Longitudinal Model of Institutional Departure are Academic and Social Integration. This study was particularly interested in the degree of social integration for non-traditional students for persistence. Some studies (Loppnow, 1989; Nora, Attinasi, and Matonak, 1990; Pascarella, Terenzini, and Wolfle, 1986) professed the impact of social integration was either moderate or less than moderate for various groups of students, another study (Webb, 1991) revealed social integration played little or no part in the persistence of students, especially the non-traditional or community college students. This study revealed that social and academic integration is important for community college students, but we have to be careful about the measures we use to assess its impact on persistence.

The major differences in significant variables in the regression equations utilizing the CES and IIS appeared in the Academic/Social Integration Block. The significant variables in the IIS regression equation were the College GPA, Academic/Intellectual Development, and Faculty Concern for Student Development and Teaching. All three of these variables are academic integration variables. However, contrary to Tinto's model

(1993), the Faculty Interactions factor was not significantly related to persistence. In this sample, faculty interactions were not positively or negatively related to persistence. Thus, it appears academic integration can take various forms and are not necessarily directly rooted in students' interaction with faculty. Future research should test the indirect relationships among these factors or how they relate to persistence.

There really is only one social integration variable, Peer Group Interaction, and that was not significant in the attempt to replicate the IIS results. The Peer Group Interaction variable in IIS is really the pivotal difference between the IIS and CES analyses. The Peer Group Interaction variable was really intended to capture the experiences of the traditional four-year residential student. It does not begin to tap the resources that a nontraditional student uses for social integration. One of the questions states "Most students at this university have values and attitudes different from my own." That question is intended for students who come from different areas of the state or even from different parts of the country. Where in a community college, the students are all from the same general local community and may differ more in age and ability than values and attitudes. Peer Group Interaction, as measured by IIS, was not a significant determinant of persistence among the Schoolcraft College population; but, other types of social and academic integration measures were important for persistence according to the CES analysis.

In the CES analyses, the College GPA, Social Cohesion, and Peer Course Selection were positive, significant social integration variables associated with persistence. The CES instrument tapped into the social integration mentality of a nontraditional student. These results show that a nontraditional student responds to questions about a sense of belonging and a sense of morale (Social Cohesion), which contribute to persistence. This corresponds to the women's focus group, I conducted in the pilot study, when the women talked about social support and the fact that they tried to find someone in each class to talk to and depend on for information. In other words they carved out a niche where they felt they belonged. These results confirm the utility of capturing students own sense of belonging to the college community (Hurtado & Carter 1997) quite apart from their activities and interactions.

Another interesting aspect of the results show that financial aid is significantly related to persistence. The effect of receiving financial aid can be twofold. Cabrera, Nora, and Castaneda (1992) found that receiving financial aid may remove anxieties, time and effort that would be expended on acquiring sufficient funds to remain in school. Another perspective is from Hossler (1984) where he has argued that recipients of work-study funds on campus have the added advantage of becoming integrated with faculty and staff outside the classroom. Schoolcraft College has an active financial aid office that secures many student-aide programs. The student aide on campus is a familiar sight. In fact, my first outside employment after marriage and four children was as a student aide to the Assistant Dean of Business. Perhaps, this type of financial aid, too, is serving to foster the social integration of students at Schoolcraft College.

Peer Course Selection

Another important concept in the social integration aspect of the CES analyses was the positive relationship of the Peer Course Selection variable to persistence to the next semester. The two items that comprise this factor are 1) I plan to enroll in a future class with people I know and 2) Met someone in class that you decided to take another class with. This certainly supports the literature on learning communities (Tinto, 1994).

A learning community is a method of instruction that is used to keep the same students together for a number of classes to develop a supportive environment. A learning community involves packaging two, three, four, sometimes five classes together: classes such as English, sociology, and biology. Sometimes the classes can have a central theme and the faculty work together to teach along the theme. Examples of themes are "The Nature of Man", "Modern thought, Images and Feeling", "The Making of America: Individualism". The student registers for all of the classes as a package. Therefore the same students stay together for the classes, giving them more of an opportunity for interaction and creating a student cohort. Tinto (1994) found that in a learning community atmosphere, "the students found academic and social support for their learning among their peers and they became actively involved in learning." My results indicate that in the absence of a formal learning community, students have reached out to form their own supportive learning community through selecting the same courses with peers. This informal activity, in turn, leads to persistence.

External Commitments

In response to other research, Tinto (1993) added the concept of external commitments in his latest revised retention model. According to Brainard (1973), Martin, (1974) and Hunter and Sheldon (1980), family pressures and obligations were reported to be major reasons for community college students to withdraw. Tinto responded by nesting the college experiences, academic and social integration and goals and commitments in arena of external commitments. My study has been one of the first to test the 1993 model including this concept. Surprisingly, the results indicate (controlling for other factors) that external commitments do not hinder a nontraditional student's persistence. It is possible that external commitments are strongly associated with integration and financial aid, and when these needs are met, external commitments do not detract the student from academic progress. It is also possible that if student goals and commitment are relatively strong, the student may find ways to balance outside commitments in order to persist. Further research in this area may want to include research on nontraditional students' work commitment and its relationship to persistence.

Differences for Part-time and Full-time Students

The two subgroups that were analyzed were full-time students, and part-time students to determine if social integration had any influence on the student's decision to persist. The part-time and full-time students appeared to respond differently. In researching the literature for the part-time group, the part-time students very often are the forgotten group. Yet part-time students comprise a large portion of the college population. The results for the part-time students in both of the surveys demonstrate that only academic integration is important. If they get good grades; they return the following semester. However, it also appears that social integration is indirectly related to part-time student persistence, mediated by college grades. More research is needed on these indirect relationships.

The results for full-time students in the IIS survey show only significant academic variables, while at the same time, the results for full-time students in the CES survey show three significant social integration variables. Again the two social integration variables, Social Cohesion and Peer Course Selection, are significant variables for full-time nontraditional students. Perhaps the social opportunities are more available for full-time students. Simply the time frame of being on campus more, being able to join social groups such as Phi Theta Kappa, Ski Club, and other student organizations leads to the sense of belonging. In addition, the full-time students are more likely to study with others, select classes together, and meet others for study groups, lunch, and just socialize. Results indicate that the CES survey reflects this type social integration for nontraditional full-time students while the IIS is not specific enough to capture these student experiences.

Implications for Practical Application

Since this is an institutionally-based study, applied institutional policy and practices are an important result of the study. The following suggestions are a result of this study being conducted at Schoolcraft College.

Increase Sense of Belonging

Originally the survey was sent to over 1700 students that took the ASSET test. Upon further examination it was revealed that only 1200 of those students actually enrolled in the 1996 fall semester. The institution had already lost 500 or 30 percent of perspective students who had expressed an interest in the college. Perhaps some of those students took the tests at Schoolcraft College as a second choice and were accepted at their first choice institution after placement tests were administered. Schoolcraft College needs to follow up on those students before the semester starts. Follow up letters, counselor appointments, student information, tours all can be spaced throughout the time they took the ASSET test and the beginning of the semester. This will all give students a sense of belonging to Schoolcraft College even before they start school.

After the semester begins, promotional give-a-ways, such as Schoolcraft College car window decals and sweatshirts could be utilized to create identification with and a sense of belonging to the Schoolcraft College community. The student aide program could be enhanced and promoted not only as a source of income, but as a means of integration into the college community.

Emphasize Goals and Commitments

For those students that do register for class, concentrated effort should be given to establishing some educational goals. According to Bean (1982) the individual student intention at a specific institution are important predictors of persistence. Instead of emphasizing what to take this semester only, a wider scope of advising on student goals should be endorsed. Perhaps the counselors can map out a two-year plan for transfer students or a one- or two-year plan for career students and show each semester how the student is progressing toward that goal. A simple graphic on the grade report showing the percentage of the overall plan that has been completed by the courses taken in the current semester would help to remind the student of the eventual goal. Besides serving as a constant reminder of goal completion, this change can insure the institutional commitment for the student remains high.

Frequent Student Evaluation

One of the significant CES factors was Seeking Classroom Assistance. In the regression equation, Seeking Classroom Assistance was positive until GPA was added to the equation. Then it became a negative significant variable. While many students admitted to asking for help, those were the students that did not persist. It is very possible that those students waited too long to request help either from their classmates or from student assistance center. By the time they asked for help, their grades had slipped too far to recover. It may be that early feedback would help some students with this problem. If mid-way through the semester, the faculty were required to give feedback to the students regarding their grades, more students might be encouraged to improve their performance. This could also be an opportunity for more positive interaction between the faculty and students, and for the faculty to show concern for the student's progress before the end of the term.

Other institutions have begun early warning systems to identify at-risk students. Realizing that mid-term may already be too late to help these students, their early warning system begins earlier into the semester. Walla Walla Community College, for instance, makes contact with the student only four weeks into the semester and connects the student with their institutional services. Bunker Hill Community College has course specific monitoring (Tinto, 1993). As my study shows, whatever the method, early intervention for assistance with at-risk students will help persistence.

Help Students Build Cohort Groups

The significance of the Peer Course Selection factor underscores the students' attempts to create a personal cohort group for classes. Knowing someone else in the class is important to them. This study shows that for commuter schools, the classroom is the crossroad for the academic and social integration. The classroom is the primary place for interaction between faculty and students. With the community college students' commitments and limited time, the classroom is the place that students must engage; engage with each other and with the faculty. If it doesn't happen in the classroom, it will probably not happen elsewhere in the institution.

Therefore, some institutions have begun to focus their attention on creating classroom settings and academic programs that actively include the students in the learning process and help to build a cohort group. They have employed a wide array of programs to help students succeed. One such program is the learning community in which students take a series of courses with the same peers and can receive supplemental instruction related to the set of courses in any one term. Another new technological innovation seems to also aid in building cohort groups. E-mail classes are finding the students create chat rooms in order to communicate and build a rapport with each other.

Continue Faculty Development Program

In order to implement any classroom activity, the faculty member should understand the need, have the knowledge and ability, and the commitment to use the tools to help nontraditional students persist. While Faculty Interaction was not directly related to persistence in this study, it may be a result of insufficient interaction. On-going faculty development programs are needed to keep the faculty abreast of the research being conducted on student persistence and the importance of the faculty's involvement. In order to implement changes, faculty should be given the time and opportunity to implement new programs such as the learning communities. Even if the institution is willing to finance the training, so often the faculty are heard asking for time away from their normal teaching loads to develop new and innovative ways to involve the students in the classroom. Time is often more important than money for faculty, and thus requires commitment on the part of the institution to support faculty development.

Limitations of Study

This study is an institutional study and the results can apply only to this population. However the CES survey will have relevance at any community college. While external commitments were confirmed as not hindering persistence, I would recommend continuing to assess this type of activity. Future research should include whether the student works on or off campus, as well as, the number of hours worked by students.

It would have been advantageous to exactly replicate the 1980 Pascarella & Terenzini study, but the factor analysis did not replicate the results of the 1980 study. While one of the factors matched exactly, and others match very closely, some factors were completely different and one factor, goal and institutional commitments, did not appear at all. The use of a modified version of the IIS was necessary for this population.

Despite these limitations, there were sufficient linkages of the factors to support similar student behavior.

According to the Institutional Research Department at Schoolcraft, a 25 percent response is a normal response rate for this college. While this study had a 25 percent response rate, additional effort should be expended to increase student response rates. Perhaps taking the survey to the classrooms for immediate processing may strengthen the returns. Schoolcraft's own Institutional Research Department has found phone surveys to be more successful. Another recommendation is to start the survey at the four-week range. The survey ran too long into the semester and either never reached some students or they had already decided to return (or not to reenroll) at the time of administration. To correct for this limitation, the data were weighted to correct for non-response bias. It should be noted that response weights will be necessary in the future when low response rates occur among this population.

Implication for Future Research

The basic theory used in this study is Tinto's model of institutional departure. While this model was originally conceptualized in 1975 generally for four-year residential students, it has been modified several times (1987, 1993) to include more recent research on minorities, two-year institutions and commuting students. This study was motivated by my own experiences as a faculty member at a two-year commuting institution. Previous research has shown the pattern of departure for residential institutions was impacted by academic and social integration. In contrast the research on departure from commuting colleges was shown to be influenced more by academic integration and less by social integration. However in my daily contact with commuting students, I sensed a definite social context as well as academic context in the students interactions. I questioned the insufficient test measures for commuting students and how this translated into departure behavior.

While Tinto's Model of institutional departure is sufficient as a baseline theory, many variables such as complexity of student situations demands dynamic research-based clarification. As this study has shown, a detailed measure for each student segment might be more revealing rather than using a generic measure. This conclusion is demonstrated by the break down of differences in the impact of social integration among part-time vs full-time students.

The role of external commitments was introduced in Tinto's 1993 model of institutional departure. However, this study showed that the external commitments did not hinder persistence when other factors are controlled. However, Tinto does state that if external commitments are balanced than it is the academic and social interaction that can contribute to the departure decision. Still more research on work and family obligations might reveal how acutely these factors enhance or diminish persistence.

In this study a modified version of the IIS was used based on the factor analysis of this sample. While the reliability scales for the original IIS were adequate and might have been used, conducting the factor analysis revealed much more information about this Schoolcraft College sample and required modifying the IIS measure. This suggests that future studies utilizing the IIS instrument should undergo strong tests before the factors are used for analysis and make sure the structure of the IIS factors are appropriate for the population.

The time frame of the study of persistence is another issue for future research. While for practical reasons, my study covered only from one semester to the following semester, it would be more advantageous to follow the path of a student's persistence for a longer period of time. Practically, it appears the issue for nontraditional students is no longer a matter of contiguous semester persistence but of long term continuous persistence. Many of the students do return to Schoolcraft College at later points in their degree process.

Conclusion

Student persistence and retention is the goal of many institutions. This institutional study relied on the 1993 Tinto Model of institutional departure as a basis for research. At issue was the integrative experiences, academic and social, of community college students and how those experiences predict persistence.

Overall the results show that the academic and social integration experiences are important to the persistence of community college students. More importantly my study was able to capture new dimensions of integration among these students. The Peer Course variable shows the importance to these students of being in a classroom with someone they know. In addition, the focus groups were able to describe different ways this was important. The women liked the social support. The men liked helping each other. The effect of a sense of belonging to the campus community was also significantly related to persistence.

Comparing the results of this study to the results of the 1980 Pascarella & Terenzini study has demonstrated that a modified version of the IIS was a valid predictor of persistence for this population; but, that the CES measure was shown to be a better, more relevant measure. A contributing factor to these results may be the evolution of higher education over the last 20 years. Perspective college students have more choices today than 20 years ago. There are more educational institutions available to them as well as different modes of college attendance. In a large urban area students may have the choice of a college class during the high school years, community college, a residential and commuter college as well as colleges that service only the last two years of college or chose to attend college electronically--taking one course at a time to complete a degree.

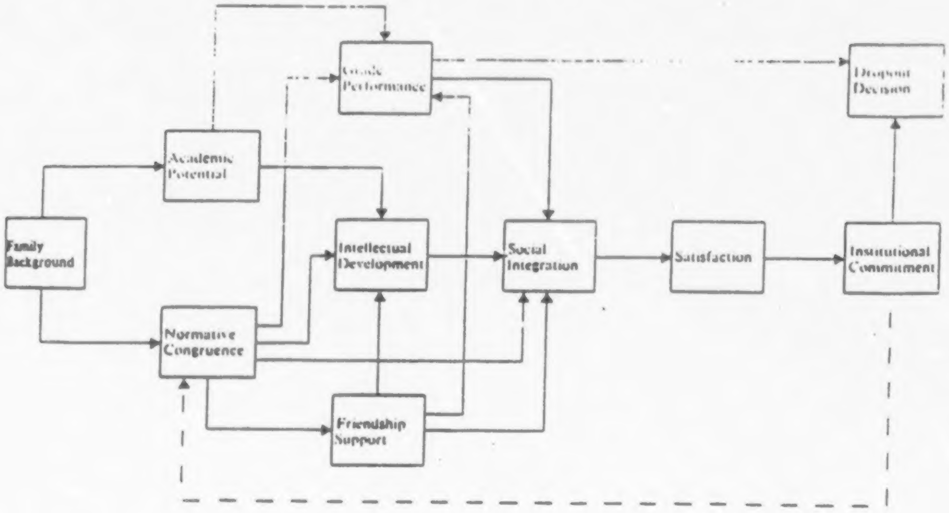
The students' ability to transfer between these different types of institutions and to attend more than one college in a single semester has blurred the lines between traditional and nontraditional students as well as between two- and four-year institutions. Assessing the impact and quality of academic and social integration at all institutions continues to be a challenge. My study has provided the CES instrument, a series of measures that have proven valid for this new blending of students and institutions, which could be instrumental in future research. In the contemporary environment, there is limited time for education, and those institutions that incorporate innovations to meet student needs and engender a sense of social and academic integration can see improvement in student persistence.

APPENDICES

APPENDIX A-1

Spady (1970) Model

An Explanatory Sociological Model of the Dropout Process



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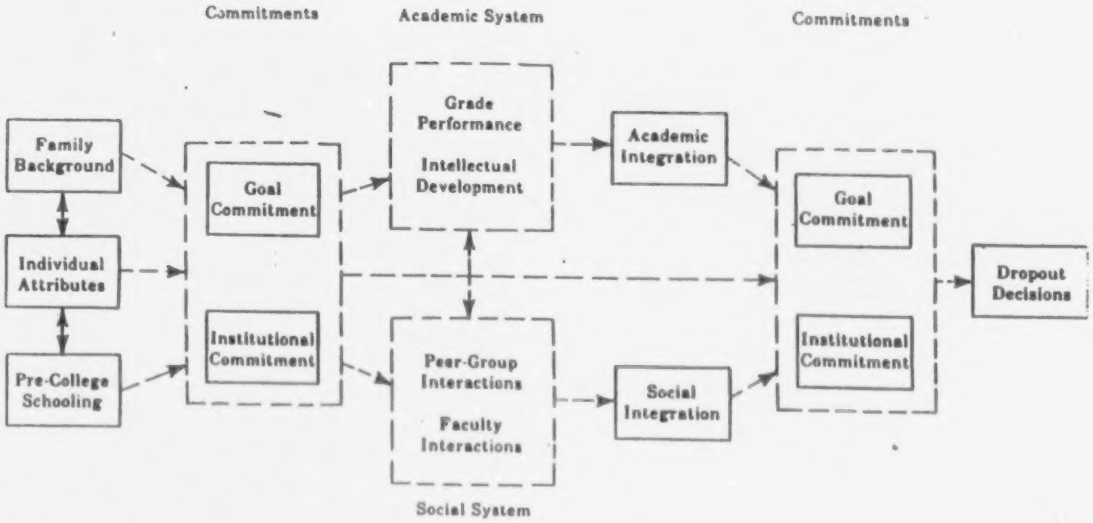
APPENDIX A-2

Tinto (1975) Model



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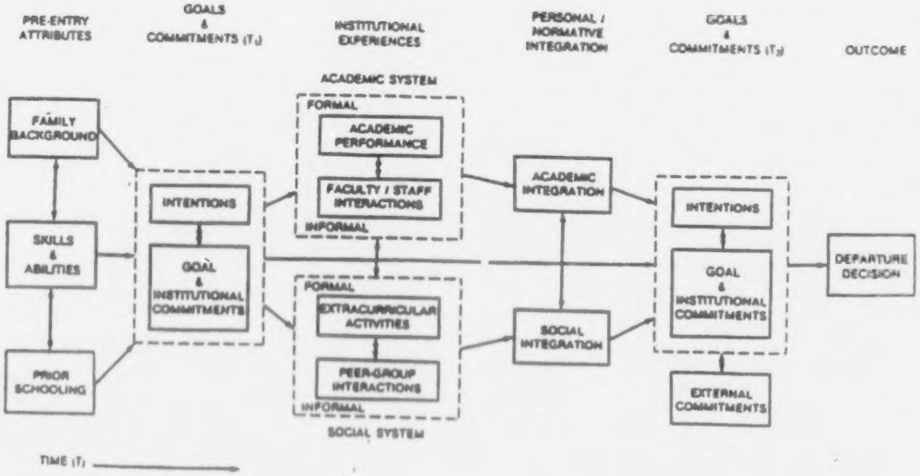
APPENDIX A-3

Tinto (1987) Model



A model of institutional departure

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APPENDIX A-4

Tinto (1993) Model

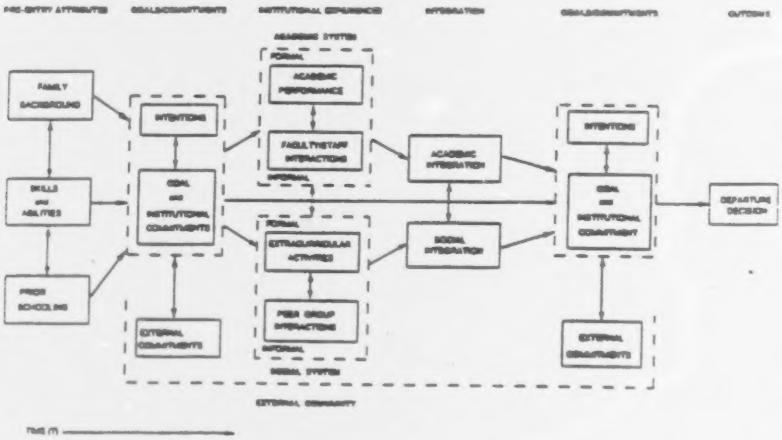

Fig. 4.1. A longitudinal model of institutional departure.

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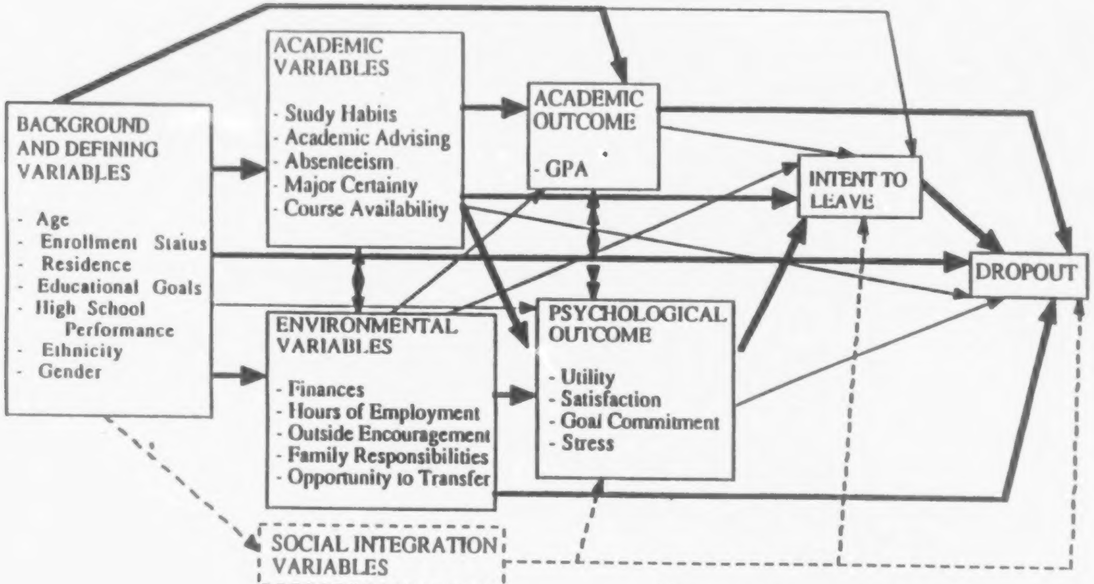
APPENDIX A-5

Bean and Metzner (1985) Model



A Conceptual Model of Nontraditional Student Attrition.

Source: Bean and Metzner, 1985, p. 491.

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APPENDIX B

Institutional Integration Scale

Scale I (Peer-Group Interactions) and Scale II (Interactions with Faculty)

Peer-Group Interactions

Since coming to this university I have developed close personal relationships with other students

The student friendships I have developed at this university have been personally satisfying

My interpersonal relationships with other students have had a positive influence on my personal growth, attitudes, and values

My interpersonal relationships with other students have had a positive influence on my intellectual growth and interest in ideas

It has been difficult for me to meet and make friends with other students

Few of the students I know would be willing to listen to me and help me if I had a personal problem

Most students at this university have values and attitudes different from my own

Interactions with Faculty

My nonclassroom interactions with faculty have had a positive influence on my personal growth, values, and attitudes

My nonclassroom interactions with faculty have had a positive influence on my intellectual growth and interest in ideas

My nonclassroom interactions with faculty have had a positive influence on my career goals and aspirations

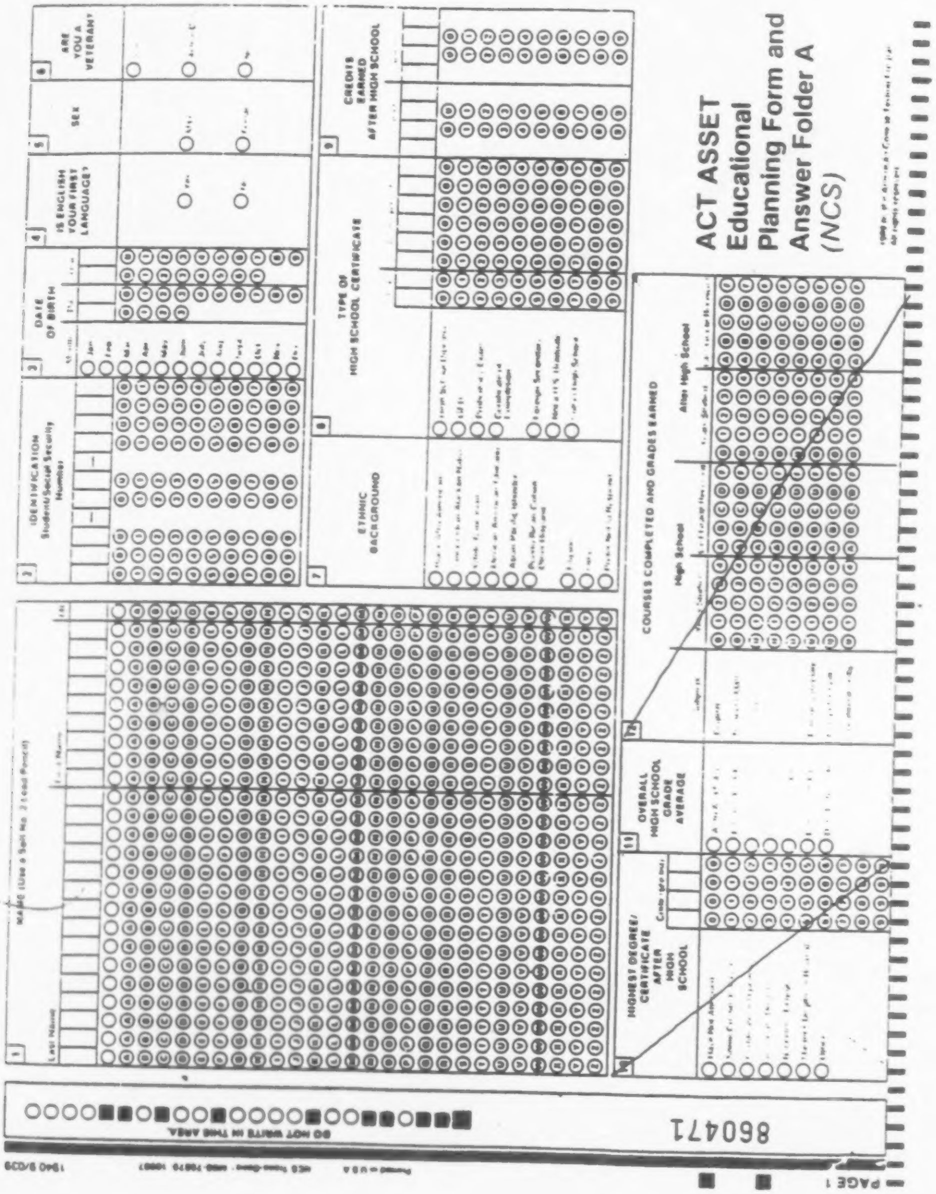
Since coming to this university I have developed a close, personal relationship with at least one faculty member

I am satisfied with the opportunities to meet and interact informally with faculty members

Source: Pascarella and Terenzini, 1980 p. 66-67

APPENDIX C

ACT ASSET Planning Form



1 NAME (Use a Soft No. 2 Lead Pencil)

Last Name

First Name

2 IDENTIFICATION Student/Social Security Number

3 DATE OF BIRTH

4 IS ENGLISH YOUR FIRST LANGUAGE?

5 SEX

6 ARE YOU A VETERAN?

7 ETHNIC BACKGROUND

8 TYPE OF HIGH SCHOOL CERTIFICATE

9 CREDITS EARNED AFTER HIGH SCHOOL

HIGHEST DEGREE/CERTIFICATE AFTER HIGH SCHOOL

OVERALL HIGH SCHOOL GRADE AVERAGE

COURSES COMPLETED AND GRADES EARNED

High School

After High School

ACT ASSET Educational Planning Form and Answer Folder A (NCS)

DO NOT WRITE IN THIS AREA

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PAGE 1

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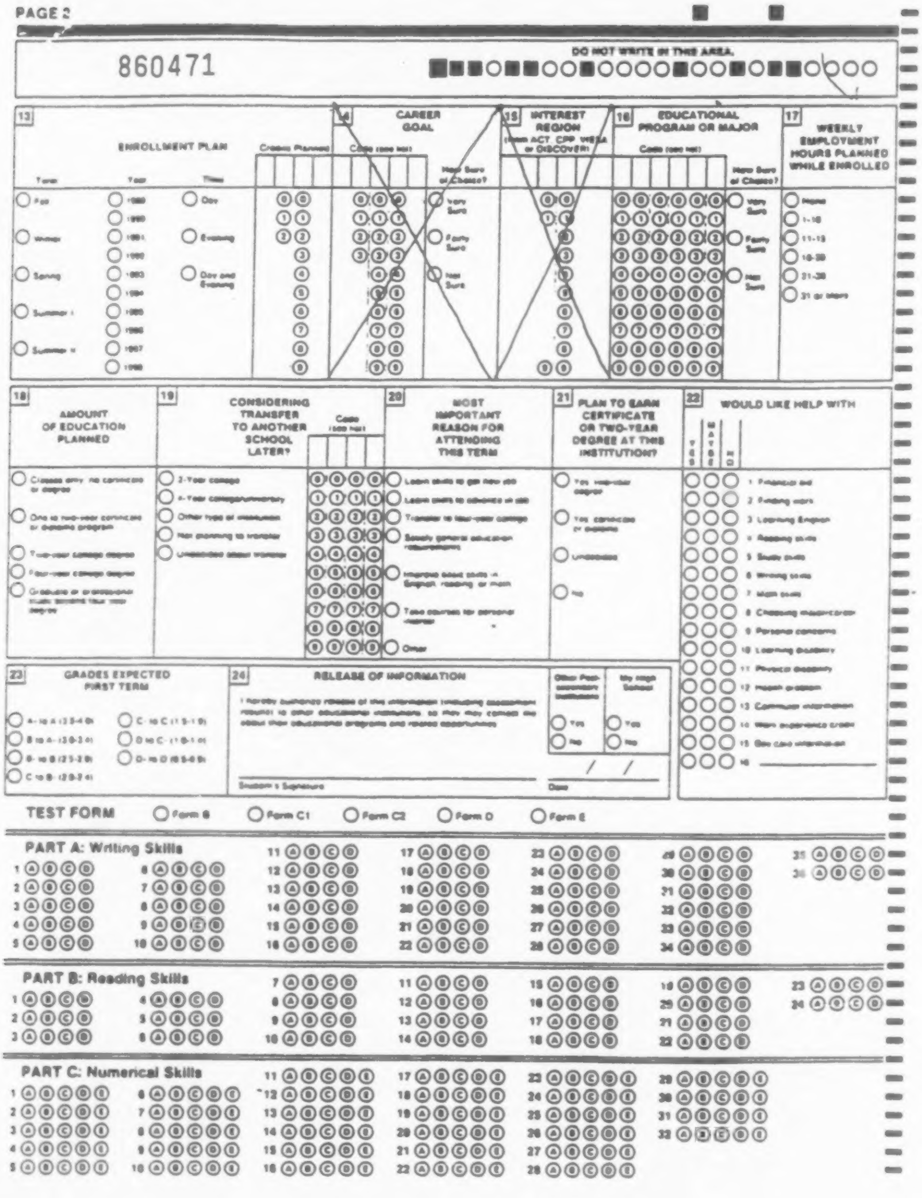

PAGE 2

860471

DO NOT WRITE IN THIS AREA.

13 ENROLLMENT PLAN

Credits Planned

14 CAREER GOAL

How Sure of Choice?

15 INTEREST REGION (from ACT, CPP, WESA or DISCOVER)

16 EDUCATIONAL PROGRAM OR MAJOR

How Sure of Choice?

17 WEEKLY EMPLOYMENT HOURS PLANNED WHILE ENROLLED

18 AMOUNT OF EDUCATION PLANNED

19 CONSIDERING TRANSFER TO ANOTHER SCHOOL LATER?

20 MOST IMPORTANT REASON FOR ATTENDING THIS TERM

21 PLAN TO EARN CERTIFICATE OR TWO-YEAR DEGREE AT THIS INSTITUTION?

22 WOULD LIKE HELP WITH

23 GRADES EXPECTED FIRST TERM

24 RELEASE OF INFORMATION

TEST FORM ○ Form B ○ Form C1 ○ Form C2 ○ Form D ○ Form E

PART A: Writing Skills

PART B: Reading Skills

PART C: Numerical Skills

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APPENDIX D

ASSET Local Items

ASSET LOCAL ITEMS

PLEASE DO NOT MAKE ANY MARKS IN THIS BOOK
* * USE YOUR ANSWER SHEET * *

1. Is Schoolcraft College your:
   - A. First choice
   - B. Second choice
   - C. Third choice
   - D. Less than third choice
2. Attending college is very important to me.
   - A. Very true
   - B. Somewhat true
   - C. Not true
3. Of the following, who most influenced your decision to attend Schoolcraft?
   - A. My parents
   - B. My employer
   - C. My friends/spouse
   - D. My high school teacher or counselor
   - E. None of the above
4. The highest level of education completed by your mother was:
   - A. Grade school/8th grade
   - B. High school/GED
   - C. Some college/2-yr. degree
   - D. 4-yr. degree or more
   - E. Don't know
5. The highest level of education completed by your father was:
   - A. Grade school/8th grade
   - B. High school/GED
   - C. Some college/2-yr. degree
   - D. 4-yr. degree or more
   - E. Don't know

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6. Has the parent with whom you regularly resided completed a bachelor's degree?
   A. Yes
   B. No

7. Are you a single parent?
   A. Yes
   B. No

8. How many dependents are you responsible for that are living in your household?
   A. 0
   B. 1 to 2
   C. 3 or 4
   D. 5 or more

9. Have you been laid off during the last two years?
   A. Yes
   B. No

10. If English is not your native language, do you have limited English proficiency?
    A. Yes
    B. No
    C. This does not apply to me

11. After enrolling for the Fall 1996 semester, do you intend to continue taking classes at Schoolcraft by enrolling in the next semester (Winter 1997)?
    A. Yes
    B. No

12. How committed are you to completing an academic program (Assoc. Degree, Certificate, or Transfer) at Schoolcraft College?
    A. Strongly committed
    B. Somewhat committed
    C. Not very committed
    D. Uncertain about continuing at Schoolcraft
    E. Do not intend to complete an academic program at Schoolcraft

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APPENDIX E

Placement Report

SCHOOLCRAFT COLLEGE
Learning Assistance Center/Assessment Center September 6, 1995

Report on ASSET and CPTs Fall 1995 Placement

New Applicants Fall =
2292
- 1782
510
potential ACT Scores

total = 1782

Placement	Frequency and Percent within Placement Range					
	CPTs, Fall '95 (N = 734)		ASSET, Fall '95 (N = 1048)		ASSET, Fall '94 (N=2131)	
	N	Percent	N	Percent	N	Percent
Writing:						
Eng 50	165	24%	274	26%	453	21%
DZ			88	8%	167	8%
Eng 55,100	184	27%	330	32%	674	32%
DZ			129	12%	271	13%
Eng 101	330	49%	224	21%	565	27%
Writing Below College Level:	349	51%	821	79%	1565	74%
Reading:						
Colls 50	105	16%	158	15%	229	11%
DZ			43	4%	86	4%
Colls 53,55	123	19%	295	28%	640	30%
DZ			80	8%	0	0%
College Level	433	65%	469	45%	1174	55%
Reading Below College Level:	228	35%	576	55%	955	45%
Numerical:						
Math 45	440	63%	228	28%	452	21%
Math 47	121	17%	235	23%	827	39%
DZ			162	16%		
Math 51, 55	143	20%	356	34%	850	40%
Numeric Below College Level:	561	80%	260	67%	1279	60%
Elementary Algebra:	(Total N = 268)		(Total N=224)		(Total N = 665)	
Math 47	24	9%	210	94%	637	96%
Math 51	173	65%	12	5%	24	4%
Math 112	71	26%	2	1%	4	1%

SD:placement.doc
9/6/95

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NEW APPLICANT PROFILE FALL 1995

STATUS	**FALL #**	**1991**	**FALL #**	**1992**	**FALL #**	**1993**	**FALL #**	**1994**	**FALL #**	**1995**
FRESHMAN	2,343	68.11%	2,593	71.63%	2,298	66.26%	2,104	65.63%	2,292	72.17%
TRANSFER	1,097	31.89%	1,027	28.37%	1,170	33.74%	1,102	34.37%	884	27.83%
TOTAL	3,440	100.00%	3,620	100.00%	3,468	100.00%	3,206	100.00%	3,176	100.00%
RESIDENCY										
RESIDENT	1,853	53.87%	1,965	54.28%	1,850	53.34%	1,733	54.05%	1,717	54.06%
NON-RESIDENT	1,577	45.84%	1,644	45.41%	1,608	46.37%	1,452	45.29%	1,439	45.31%
FOREIGN	10	0.29%	11	0.30%	10	0.29%	21	0.66%	20	0.63%
TOTAL	3,440	100.00%	3,620	100.00%	3,468	100.00%	3,206	100.00%	3,176	100.00%
SEX										
MALE	1,459	42.41%	1,494	41.27%	1,566	45.16%	1,450	45.23%	1,414	44.52%
FEMALE	1,981	57.59%	2,126	58.73%	1,902	54.84%	1,756	54.77%	1,762	55.48%
TOTAL	3,440	100.00%	3,620	100.00%	3,468	100.00%	3,206	100.00%	3,176	100.00%
ETHNIC ORIGIN										
WHITE	3,040	88.37%	3,190	88.12%	2,980	85.93%	2,774	86.53%	2,730	85.96%
BLACK	245	7.12%	257	7.10%	273	7.87%	226	7.05%	230	7.24%
AMERICAN INDIAN	15	0.44%	25	0.69%	30	0.87%	33	1.03%	17	0.54%
ASIAN	62	1.80%	71	1.96%	68	1.96%	63	1.97%	87	2.74%
HISPANIC	41	1.19%	50	1.38%	62	1.79%	58	1.81%	51	1.61%
OTHER	37	1.08%	27	0.75%	55	1.59%	52	1.62%	61	1.92%
TOTAL	3,440	100.00%	3,620	100.00%	3,468	100.00%	3,206	100.00%	3,176	100.00%

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NEW APPLICANT PROFILE FALL 1995

ACADEMIC GOAL										
ASSOC. DEGREE	1,544	44.88%	1,651	45.61%	1,561	45.01%	1,430	44.60%	1,440	45.34%
PER. INTEREST	267	7.76%	269	7.43%	222	6.40%	234	7.30%	250	7.87%
VOC. IMPROVEMENT	187	5.44%	183	5.06%	175	5.05%	168	5.24%	175	5.51%
UNIVER. TRANSFER	1,193	34.68%	1,266	34.97%	1,240	35.76%	1,149	35.84%	1,081	34.04%
OTHER	249	7.24%	251	6.93%	270	7.79%	225	7.02%	230	7.24%
TOTAL	3,440	100.00%	3,620	100.00%	3,468	100.00%	3,206	100.00%	3,176	100.00%
AGE										
16 - 20	1,608	46.74%	1,811	50.03%	1,786	51.50%	1,632	50.90%	1,710	53.84%
21 - 25	598	17.38%	619	17.10%	588	16.96%	538	16.78%	503	15.84%
26 - 30	384	11.16%	420	11.60%	343	9.89%	365	11.38%	303	9.54%
31 - 35	299	8.69%	289	7.98%	277	7.99%	253	7.89%	200	6.30%
36 - 40	241	7.01%	220	6.08%	191	5.51%	176	5.49%	189	5.95%
41 - 45	145	4.22%	139	3.84%	153	4.41%	136	4.24%	148	4.66%
46 - 50	77	2.24%	65	1.80%	74	2.13%	59	1.84%	68	2.14%
51 - ABOVE	88	2.56%	57	1.57%	56	1.61%	47	1.47%	55	1.73%
TOTAL	3,440	100.00%	3,620	100.00%	3,468	100.00%	3,206	100.00%	3,176	100.00%
CRITERIA										
COST	553	16.08%	633	17.49%	616	17.76%	560	17.47%	561	17.66%
LOCATION	1,240	36.05%	1,162	32.10%	1,148	33.10%	1,118	34.87%	1,095	34.48%
CLASS SIZE	52	1.51%	93	2.57%	33	0.95%	41	1.28%	36	1.13%
REPUTATION	389	11.31%	460	12.71%	423	12.20%	386	12.04%	394	12.41%
PROGRAMS	632	18.37%	670	18.51%	719	20.73%	645	20.12%	652	20.53%
NO RESPONSE	574	16.69%	602	16.63%	529	15.25%	456	14.22%	438	13.79%
TOTAL	3,440	100.00%	3,620	100.00%	3,468	100.00%	3,206	100.00%	3,176	100.00%
IRT/db										
10/10/95										

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APPENDIX F

Survey

October 14, 1996

Dear Student:

Your help is essential in this study of factors that affect students' completion of their college goals. It is hoped that the information collected from this study may be used to improve services to students, therefore it is important that we know as much as possible about your academic involvement, social interactions on campus, and activities and obligations off-campus. All first-time, first-term Schoolcraft students who completed the ASSET or CPT tests, are being asked to take about 15 minutes to complete this questionnaire. I recognize that this is a busy time for students, however, I hope you will take the time to help with this important study. If you so desire, you may write your name and student number at the bottom of this page. After receiving all surveys towards the end of fall term, the tear-off portion with your name will be detached and put into a drawing for two cash awards worth $100 each. Winners will be notified by December 15. The cash awards are to say thank you for participating in this important study.

Your name will be separated from the questionnaire before your responses are coded. Your responses to this questionnaire will be held in the strictest professional confidence, will be reported anonymously, and combined with data from a large group of other students. We are interested in learning about students in general, not in identifying any particular student.

Although your participation is very important, it is completely voluntary. If you come to a question that you do not wish to answer, you may skip it. There are no negative consequences of any kind for not participating. However, your complete information will help us better understand your experiences and many students like you on this campus.

When you have completed the questionnaire, put it in the postage-paid, self-addressed envelope and mail to the Research Office by November 1. Thank you for your assistance. By completing this questionnaire, you will help me complete this study and enable Schoolcraft College to gain insights about students that may influence the development of future services.

Sincerely,

Lea Allison

Lea Allison
OIS Professor

Name ______________________________

Student Number ______________________

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College Experiences Questionnaire

Schoolcraft College

Instructions: The following questionnaire is part of an educational research project being conducted at Schoolcraft College. Please answer the questions to the best of your ability.

Part 1 - Background:

1. Gender: ☐ Male ☐ Female
2. Age Group: ☐ Under 20 ☐ 20-24 ☐ 25-29 ☐ 30-34 ☐ 35 and over
3. Marital Status:
   ☐ Married with children ☐ Divorced ☐ Single, with children
   ☐ Married without children ☐ Widowed ☐ Single, never married
4. Number of credit hours currently enrolled:
   ☐ 12 credit hours or more ☐ less than 12 credit hours
5. Are you currently receiving any student financial assistance?
   ☐ Yes ☐ No
6. Combined annual household income
   ☐ $1,000-24,999 ☐ 25,000-49,999 ☐ 50,000-74,999 ☐ 75,000-99,999 ☐ 100,000 or over
7. This is the first time I have enrolled in college for college credit ☐ Yes ☐ No

Part 2 - Following is a list of statements characterizing various aspects of academic and social life at Schoolcraft College. Using the scale to the right of each statement, please indicate the extent of your agreement or disagreement with each statement, as it applies to your Schoolcraft experience during the current semester, by circling the appropriate number. Please circle ONLY ONE number for each statement.

		Agree Strongly	Agree Somewhat	Disagree Somewhat	Disagree Strongly
8.	Few of my courses this year have been intellectually stimulating	4	3	2	1
9.	I am satisfied with my academic experience at Schoolcraft College this semester	4	3	2	1
10.	I am more likely to attend a cultural event (for example, a concert, lecture or art show) now than I was a year ago	4	3	2	1
11.	I am satisfied with the extent of my intellectual development this semester	4	3	2	1
12.	In addition to required reading assignments, I read many of the recommended books in my courses	4	3	2	1
13.	My interest in ideas and intellectual matters has increased this semester	4	3	2	1
14.	I have no idea at all what I want to major in	4	3	2	1
15.	My academic experience this year has had a positive influence on my intellectual growth and interest in ideas	4	3	2	1
16.	Getting good grades is not important to me	4	3	2	1
17.	I have performed academically as well as I anticipated I would	4	3	2	1
18.	My interpersonal relationships with other students have had a positive influence on my intellectual growth and interest in ideas	4	3	2	1
19.	I have developed close personal relationships with other students	4	3	2	1
20.	The student friendships I have developed this semester have been personally satisfying	4	3	2	1
21.	My interpersonal relationships with other students have had a positive influence on my personal growth, values and attitudes	4	3	2	1
22.	It has been difficult for me to meet and make friends with other students	4	3	2	1
23.	I am dissatisfied with my dating relationships	4	3	2	1
24.	Few of the Schoolcraft students I know would be willing to listen to me and help me if I had a personal problem	4	3	2	1
25.	Most students at Schoolcraft have values and attitudes which are different from my own	4	3	2	1
26.	I am satisfied with the opportunities to participate in organized extra-curricular activities at Schoolcraft	4	3	2	1
27.	I am happy with my living arrangement this semester	4	3	2	1
28.	I am satisfied with my opportunities this semester to meet and interact informally with faculty members	4	3	2	1
29.	My non-classroom interactions with Schoolcraft faculty members have had a positive influence on my intellectual growth and interest in ideas	4	3	2	1
30.	Few of the Schoolcraft faculty members I have had contact with this year are willing to spend time outside of class to discuss issues of interest and importance to students	4	3	2	1
31.	This semester, I have developed a close, personal relationship with at least one faculty member	4	3	2	1
32.	My non-classroom interactions with faculty this semester have had a positive influence on my personal growth, values and attitudes	4	3	2	1
33.	Few of the faculty members I had contact with this semester are genuinely outstanding or superior teachers	4	3	2	1
34.	My non-classroom interactions with faculty this semester have had a positive influence on my career goals and aspirations	4	3	2	1
35.	Few of the faculty members I have had contact with this semester are genuinely interested in students	4	3	2	1
36.	Most faculty members I have had contact with this semester are genuinely interested in teaching	4	3	2	1
37.	Most of the Schoolcraft faculty members I have had contact with are interested in helping students grow in more than just academic areas	4	3	2	1
38.	It is important for me to graduate from college	4	3	2	1
39.	It is not important to me to graduate from Schoolcraft	4	3	2	1
40.	I am confident that I made the right decision in choosing to attend Schoolcraft	4	3	2	1
41.	It is likely that I will register at Schoolcraft in the winter, 1997 semester	4	3	2	1

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Part 3

Indicate how often you engage in the following activities

	Often	Sometimes	Rarely	Never
42. Exchange phone numbers with people in your class	4	3	2	1
43. Call another classmate about homework	4	3	2	1
44. Study in groups	4	3	2	1
45. Work with a study buddy	4	3	2	1
46. Met someone in class that you decided to take another class with	4	3	2	1
47. Meet and talk to people in between classes	4	3	2	1
48. Attend a pre-arranged study group session	4	3	2	1
49. If you don't understand what is going on in class, how often do you turn and ask someone near you to explain	4	3	2	1

Part 4

Indicate the extent of your agreement or disagreement

	Agree Strongly	Agree Somewhat	Disagree Somewhat	Disagree Strongly
50. I enjoy participating in group projects in some classes	4	3	2	1
51. I plan to enroll in a future class with people I know	4	3	2	1
52. I typically do not have enough time to meet other people	4	3	2	1
53. I wish I had more interaction with other students	4	3	2	1
54. Friends at school make my college experience enjoyable and less stressful	4	3	2	1
55. A family member or members are my key support for attending college	4	3	2	1
56. I joined, or plan to join, an organized club or activity on campus	4	3	2	1
57. My instructors provide opportunities to interact with other students in the classroom	4	3	2	1
58. I wish I had more interactions with instructors	4	3	2	1

Part 5

Indicate how often you engage in the following activities

	Often	Sometimes	Rarely	Never
59. Talk to an instructor outside of the classroom	4	3	2	1
60. Ask an instructor for help	4	3	2	1
61. Has an instructor advised you about what class or classes to take	4	3	2	1
62. Meet other students for coffee breaks or lunch/dinner	4	3	2	1
63. Help others in your classes	4	3	2	1
64. Receive help from others in your classes	4	3	2	1

Part 6

Sometimes students face difficulties in pursuing their studies. How often is each of the following a particular problem for you?

	Often	Sometimes	Rarely	Never
65. Conflicting demands on my academic time because of home and family responsibilities	4	3	2	1
66. Conflicting demands on my academic time because of job responsibilities	4	3	2	1
67. Conflicting demands on my academic time because of community projects	4	3	2	1
68. Difficulty getting along financially	4	3	2	1
69. Difficulty with child care arrangements when I'm in classes and for studying	4	3	2	1
70. Problems with spouse or mate	4	3	2	1
71. Problems with children	4	3	2	1
72. Problems with parents	4	3	2	1
73. College creates stress in my life	4	3	2	1

Part 7

Indicate the extent of your agreement or disagreement

	Agree Strongly	Agree Somewhat	Disagree Somewhat	Disagree Strongly
74. I am lazy about keeping up with course assignments	4	3	2	1
75. In general I exercise good study habits	4	3	2	1
76. I tend to study only when I need to	4	3	2	1
77. During most of the semester, I do very little studying on weekends	4	3	2	1
78. I generally keep up with my reading assignments for class	4	3	2	1
79. Most of the time, I give a higher priority to other activities than to studying	4	3	2	1
80. Generally I put a good deal of effort into being well prepared for examinations	4	3	2	1
81. On weekends I do more studying than recreation	4	3	2	1
82. I am using or intend to use student services such as peer tutoring, career counseling, or the learning assistance center	4	3	2	1
83. I am taking or intend to take a study skills course	4	3	2	1
84. I am glad I attended Schoolcraft College	4	3	2	1
85. I feel that I am a member of the Schoolcraft College community	4	3	2	1
86. I will definitely complete a degree at Schoolcraft College	4	3	2	1
87. Schoolcraft College is one of the best community colleges in the area	4	3	2	1
88. I feel a sense of belonging to the Schoolcraft College community	4	3	2	1
89. I feel a sense of responsibility to Schoolcraft College	4	3	2	1
90. If asked, I would recommend Schoolcraft College to others	4	3	2	1
91. I am enthusiastic about Schoolcraft College	4	3	2	1
92. I see myself as a part of the Schoolcraft College community	4	3	2	1

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Thank You
for your participation in this study.

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APPENDIX G

Student Activities Survey

Survey of Student Activities
Schoolcraft College

Instructions: The following questionnaire is being prepared for an educational research project. Before the final draft, it is necessary to check the survey taker's ability to read and understand the questions. First, please answer the question to the best of your ability Second, in the space provided below the question, please write how you interpreted the question. If you had any difficulties understanding the question or choosing an answer, please write about the difficulty.

Background:

Gender:	☐ Male	☐ Female			
Age Group:	☐ Under 20	☐ 20-24	☐ 25-29	☐ 30-34	☐ 35 and over
Credit Hours Completed:	☐ Less than 30	☐ 30 or more			

1. Where have you met most of your acquaintances at this college? ______________________

Please check only one response for each of the following statment:

	Frequently	Often	Sometimes	Hardly Ever	Never
2. How often do you get phone numbers of people in your class?	☐	☐	☐	☐	☐
3. How often have you called another classmate about homework?	☐	☐	☐	☐	☐
4. How often do you study in groups?	☐	☐	☐	☐	☐
5. How often do you work with a study buddy?	☐	☐	☐	☐	☐
6. How often have you met someone in class that you have decided to take another class with?	☐	☐	☐	☐	☐

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	Strongly Agree	Somewhat Agree	Not Sure	Somewhat Disagree	Strongly Disagree
14. I wish I had more interaction with other students.	☐	☐	☐	☐	☐
15. I plan to join an organized club on campus.	☐	☐	☐	☐	☐
16. My instructors provide opportunities to interact with other students in the classroom.	☐	☐	☐	☐	☐
17. I wish I had more interaction with instructors.	☐	☐	☐	☐	☐

	Frequently	Often	Sometimes	Hardly Ever	Never
18. How often have you talked to an instructor outside of the classroom?	☐	☐	☐	☐	☐
19. How often have you asked an instructor for help?	☐	☐	☐	☐	☐
20. How often has an instructor advised you on what class or classes to take?	☐	☐	☐	☐	☐

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BIBLIOGRAPHY

BIBLIOGRAPHY

Adelman, C. (1992) The way we are: The community college as American thermometer. Washington, D.C., United States Department of Education.

Allen, D., & Nelson, J. (1989). Tinto's model of college withdrawal applied to women in two institutions. Journal of Research and Development in Education. 22(3), 1-11.

Allison, L. (1996). Social integration of nontraditional students. Michigan Community College Journal. 2(1), 79-91.

Ashar, H. & Skenes, R. (1993). Can Tinto's student departure model be applied to nontraditional students? Adult Education Quarterly. 43(2), 90-100.

Attinasi, L.C., Jr. (1989). Getting in : Mexican Americans' perceptions of university attendance and the implications for freshman year persistence. Journal of Higher Education. 60, 247-77.

Bean, J. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. Research in Higher Education. 12(2), 155-189.

Bean, J. (1982). Student attrition, intentions, and confidence. Research in Higher Education. 17, 291-320.

Bean, J. (1990). Why students leave: Insights from research. In The strategic management of college enrollments, edited by D. Hossler, J. Bean, and Associates. San Francisco: Jossey-Bass.

Bean, J. & Metzner, B. (1985). A conceptual model of nontraditional undergraduate student attrition. Review of Educational Research. 55(4), 485-540.

Bean, J. P., and N. Vesper. (1992) Student dependency theory: An explanation of student retention in college. A paper presented at the annual meeting of the Association for the Study of Higher Education, Minneapolis.

Bers, T. & Smith, K. (1991). Persistence of community college students: The influence of student intent and academic and social integration. Research in Higher Education. 32(5), 539-556.

Blanc R. A., Debuhr L. E., & Martin D. C. (1983). Breaking the attrition cycle: The effects of supplemental instruction on undergraduate performance and attrition. Journal of Higher Education, 54(1), 80-90.

Blanchfield, W. C. (1971) College dropout identification: A case study. Journal of Experimental Education, 40, 1-4.

Bollen, K. A. & Hoyle, R. H. (1990) Perceived cohesion: A conceptual and empirical examination. Social Forces. 69(2), 479-504.

Borg, W., Gall, M. (1989). Educational research: An introduction. Longman: New York.

Brainard, S. R. (1973). Student attrition: The student personnel climate. In R. L. Alfred (Ed.) Student attrition: Strategies for action. pp 72-79. Kansas City, MO.

Brower, A. M. (1992). The "second half" of student integration: The effects of life task predominance on student persistence. Journal of Higher Education, 63(4), 441-462.

Cabrera, A., Nora, A., & Castaneda, M. (1993). College persistence: Structural equations modeling test of an integrated model of student retention. Journal of Higher Education. 64(2), 123-139.

Cabrera, A., Castaneda, M., Nora, A., & Hengstler, D. (1992). The convergence between two theories of college persistence. Journal of Higher Education. 63(2), 143-164.

Cabrera, A., Nora, A., & Castaneda, M. (1992). The role of finances in the persistence process: A structural model. Research in Higher Education. 33(5), 571-593.

Carroll, D. (1989). College persistence and degree attainment for 1980 high school graduates: Hazards for transfers, stopouts, and part-timers. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.

Carter, D, Wilson, R. (1992). Minorities in higher education. Washington, D.C., American Council on Education.

Chickering, A. W. (1974). Commuting versus resident students: Overcoming the educational inequities of living off campus. San Francisco: Jossey-Bass.

Chickering, A. W., Reisser, L. (1993) Key influences on student development. San Francisco: Jossey-Bass.

Christie, N., & Dinham, S. (1991). Institutional and external influences on social integration in the freshman year. Journal of Higher Education. 62(4), 412-436.

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Coe, M. Rubenzahl, A, & Slater, V. (1984). Helping adults reenter college. In M. S. Knowles and Associates, Andragogy in Action. San Francisco: Jossey-Bass.

Cope, R., and Hannah, W. (1975). Revolving college doors. New York: John Wiley and Sons.

Cross, K. P. (1981). Adults as learners. San Francisco: Jossey-Bass.

Daggett, Dr. Recorded speech, Novi, high school, Novi, MI, 1993.

Dey, E. L. and Astin, A. W. (1993). Statistical alternatives for studying college student retention: A comparative analysis of logit, probit, and linear regression. Research in Higher Education. 34(5), 569-581.

Durkheim, E. (1951). Suicide. Translated by J. Spaulding and G. Simpson. Glencoe: The Free Press.

Everett, C. (1979). An analysis of student attrition at Penn State. University Park, Pennsylvania State University, Office of Planning and Budget.

Fleming, J. (1985). Blacks in college. San Francisco: Jossey-Bass.

Fox, R., N. (1984). Reliability and discriminant validity of institutional integration scales for disadvantaged college students. Educational and Psychological Measurement, 44, 1051-1057.

Grosset, J. (1991). Patterns of integration, commitment and student characteristics and retention among younger and older students. Research in Higher Education. 32(2), 159-178.

Hackman, R., and Dysinger, W. S. (1970). Commitment to college as a factor in student attrition. Sociology of Education. 43, 311-324.

Halpin, R. (1990). An application of the Tinto model to the analysis of freshman persistence in a community college. Community College Review. 17(4), 22-31.

Harrington, J. (1993). Why they stay: A study on the persistence of reentry women. Initiatives. 55(4), 17-24.

Hossler, D. (1984). Enrollment Management. New York: College Entrance Examination Board.

Hossler, D. & Bean, J. (1990). The strategic management of college enrollments. San Francisco: Jossey-Bass.

Hunter, R. & Sheldon, M.S. (1980). Statewide longitudinal study, part 3. Sacramento: California Community College, Office of the Chancellor.

Hurtado, S., & Carter D. F. (1994). Latino students' sense of belonging in the college community: rethinking the concept of integration on campus. Paper presented at the Annual Meeting of the American Educational Research Association. New Orleans, LA.

Hurtado, S., & Carter D. F. (1997). Effects of college transition and perceptions of the campus racial climate on latino college students' sense of belonging. Sociology of Education. 70, 324-345.

Kamens, D. (1971). The college 'charter' and college size: Effects on occupational choice and college attrition. Sociology of Education. 44, 270-296.

Knowles, M. (1990). The adult learner: A neglected species. Gulf Publishing Co., Houston.

Knowles, M. (1977). The adult education movement in the United States. Huntington, NY: Krieger Publishing Co.

Kraemer, Barbara, A. (1993). The Dimensionality of academic and social integration in persistence studies of Hispanic students. Paper presented at the 1993 meeting of the Association for the Study of Higher Education, Pittsburgh, PA.

Krueger R. A. (1988). Focus Groups: A practical Guide for Applied Research. Sage: Newbury Park, CA.

Kuh, G. & Whitt, E. (1988) The invisible tapestry: culture in American colleges & universities. ASHE-ERIC Higher Education Report. Series No.1. Washington, D.C.

Levitz, R. S., & Noel, L. (1980). Attracting and retaining adult learners--Summary report of a nationwide survey, Iowa City, IA: American College Testing Program.

Loppnow, D. (1989). Adult student attrition: An analysis of Tinto's model applied to older students. Doctoral dissertation. University of Michigan.

Rootman, I. (1972). Voluntary withdrawal from a total adult socialization organization. Sociology of Education. 4, 258-270.

Schlossberg, N., Lynch, A., & Chickering, A. (1989). Improving higher education environments for adults: responsive programs and services from entry to departure. Jossey-Bass, San Francisco.

Smith, D. (1989). The challenge of diversity: involvement or alienation in the academy?. Washington, D.C.: The George Washington University.

Spady, W. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. Interchange, 1, 64-85.

Spady, W. (1971). Dropouts from higher education: Toward an empirical model. Interchange 2, 38-62.

Stage, F. (1989). Motivation, academic, and social integration and the early dropout. American Educational Research Journal. 26(3), 385-402.

Starks, G. (1987, April). Retention of adult women students in the community college: Research findings from exceptional case studies. Paper presented at AERA, Washington, D.C.

Steltenpohl, E., & Shipton, J. (1986). Facilitating a successful transition to college for adults. Journal of Higher Education. 57(6), 637-658.

Stewart, S., Merrill, M., Saluri, D. (1986). Students who commute in L. Noel, R. Levitz, D. Saluri and Associates Increasing Student Retention. Jossey-Bass, San Francisco.

Summerskill, J. (1962). Dropouts from colleges. In The American college: A psychological and social and higher learning, edited by N. Sanford. New York: John Wiley and Sons.

Terenzini, P., Theophilides, C., & Lorang, W. (1984). Influences of students' perceptions of their academic skill development during college. Journal of Higher Education. 55, 621-636.

Terenzini, P., Lorang, W., Pascarella, E. (1981). Predicting freshman persistence and voluntary dropout decisions: A replication. Research in Higher Education. 15, 109-127.

Terenzini, P., & Wright, T. (1987). Influences on students' academic growth during four years of college. Research in Higher Education. 26(2), 161-179.

Tierney, W. (1992). An anthropological analysis of student participation in college. Journal of Higher Education. 63(6), 603-618.

Tinto, V. (1987). Leaving college: Rethinking the causes and cures of student attrition. Chicago: The University of Chicago Press.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. Review of Education Research, 45, 89-125.

Tinto, V. (1993). Leaving college: Rethinking the causes and cures of student attrition. Chicago: The University of Chicago Press.

Tinto, V. (1994). Learning communities, collaborative learning, and the pedagogy of educational citizenship. Paper presented at National Association of State Universities and Land-Grant Colleges. November 7, 1994. Chicago, Ill.

Tinto, V. Russo, P. and Kadel, S. (1994). Constructing educational communities: Increasing retention in challenging circumstances. Community College Journal, 22, 16-26.

Twombly, S. (1993). What we know about women in community colleges: An examination of the literature using feminist phase theory. Journal of Higher Education. 64(2), 187-210.

U.S. Department of Education. (1993). Digest of educational statistics. Washington, D.C.: U.S. Government Printing Office.

Upcraft, M. L., Gardner, J. and Associates. (1989). The freshman year experience. San Francisco: Jossey-Bass.

Volkwein, F. J. (1991). Improved measures of academic and social integration and their association with measures of student growth. Paper presented at the annual meeting of the Association for the Study of Higher Education. Boston, MA.

Volkwein, F., King, M., & Terenzini, P. (1986). Student faculty relationships and intellectual growth among transfer students. Journal of Higher Education. 57(4), 413-430.

Voorhees, R. (1987). Toward building models of community college persistence: A logit analysis. Research in Higher Education. 26(2), 115-129.

Webb, M. (1991). A theoretical model of community college student degree persistence. Community College Review. 16(4), 42-49.

Weidman, J., & White, R. (1985). Postsecondary "high-tech" training for women on welfare: Correlates of program completion. Journal of Higher Education. 56(5), 555-568.

Weidman, J. C. (1985). Retention of non-traditional students in postsecondary education. Paper presented at the 1985 annual meeting of the American Educational Research Association, Chicago, Illinois

Whitaker, D. (1987, November). Persistence and the two-year college student. Paper presented at ASHE, Baltimore.